THE OIL AND GAS JOURNAL

THE OIL INVESTORS' JOURNAL

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THE OIL AND GAS JOURNAL.
(Oil Investors' Journal)

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W. D. O'NEILL, General Manager.

THE WEEK IN OIL AND GAS CIRCLES.

North Texas continues to attract most attention of any of the fields now under development. At present it is difficult to predict the future of the Electra field but if any of the outside tests come in big it will mean a hurried rush of work. Leases have been taken on practically all of North Texas and some fancy prices have been paid for property.

In the Oklahoma field, Pawnee county continues good, with enough outside wells drilling to make that a point of interest for some time. A producer five miles to the northeast of the Osage pool gives promise of extensive work in the northern central portion of the Osage nation. The usual completions are reported from the older districts, though the shallow sand fields are now much less active than they were a few months ago.

There is nothing of special interest in the Louisiana, Gulf Coast or California fields, while the districts east of the river are not expected to furnish any developments worth special mention.

Marketing conditions do not show improvement. Gasoline is in good supply and contracts are reported for burning oil at ridiculously low figures.

No change in prices of crude at the wells is reported from any field.

The Turkish Ministry of Marine proposes to adopt oil fuel for torpedo boats. Turkish railway locomotives are now being equipped with oil burners. When the comparatively small percentage of American railway mileage so operated is taken into consideration, it would appear that our supposedly unenlightened neighbors are not so slow after all.

Circular letters have been sent out by Edwin C. Bell, trustee of the Drake Memorial Museum, Titusville, Pa., asking contributions to the fund. It is desired to include all oil men in this movement and all are invited to contribute and push it along. Already a number of interesting collections have been offered for the Museum and it is quite likely that upon its permanent establishment there would be available an unusual display of historical records dealing with the petroleum industry. The history of oil is rich in romance and oil men are generally conceded to evince a spirit of fraternity which makes their personal progress of unusual interest to all others in the business. The older members were apparently more appreciative of the romantic possibilities than are those of the present day. A Museum properly instituted would undoubtedly serve to arouse enthusiasm in the younger members of the fraternity and would be the means of securing many valuable records which are at present daily overlooked.

Various pipe line companies are preparing data for submission to Franklin K. Lane, member of the Interstate Commerce Commission, who has been charged with the conduct of the general inquiry into the business of the transporting companies. The first hearing will be in Houston, Tex., Monday, September 25. Later hearings will be conducted at various points in the Mid-Continent field. The Commission announces that the Houston hearing is primarily to develop the scope of its authority over the pipe lines and it appears probable that the various companies who are engaged in interstate commerce will welcome the opportunity to have their status legally fixed.

MID-CONTINENT PRODUCTION.

For the first time since May, the deliveries of oil from Mid-Continent fields by the Prairie Oil and Gas Company were less than the runs, the August report showing that 27,166 barrels were put into tankage by this company. The daily average runs by the Prairie were 91,035 barrels and the deliveries, 90,159 barrels, showing an excess of 876 barrels in the daily runs over deliveries. This is accounted for principally by the accession of the Central Fuel Oil Company's production, which was run by the Prairie during August and which would amount to approximately 6,500 barrels. The deliveries for July were 91,127 barrels daily, less than 1,000 barrels per day more than during August. Without the Central production, the Prairie's figures would have shown an excess of deliveries over runs amounting to 5,624 barrels per day. While this additional production allowed the Prairie to go through the month without drawing on stocks in tanks, the margin was so small that unless something new develops during September it is quite likely that there will be a further drain this month.

The estimated runs and deliveries of the Gulf Pipe Line Company from the Oklahoma fields during the month of August were 24,800 barrels daily while The Texas Company, losing the Central Fuel Oil production, will be credited with 19,000 barrels daily.

MADERO'S POLICY STATED.

Americans who contemplate extensive operations in the Mexican oil fields will be interested in a statement issued by President Madero, following a conference with Lord Cowdray, more familiarly known as Sir Weetman Pearson. There has been considerable speculation as to the probable action of the new government in regard to concessions granted under the Diaz regime and if Madero is correctly quoted it would appear that all such concessions, the terms of which have been properly observed, will be protected. Madero's statement follows:

"Lord Cowdray, representative of the house of Pearson, called upon me in order to inform himself as to what my intentions were with regard to the important undertakings which he has in this republic. I stated to him that all capitalists, foreign as well as national, will have every guaranty under my government, and that I would always with pleasure see foreign capital invested in Mexico.

"With regard to the concessions which he holds from the Mexican Government, I assured him that if he has duly complied with the respective contracts, he has nothing to fear, as my government will respect contracts and concessions which have been formulated with the late government, and which have been effected in due form and in compliance with all legal requirements.

"I also stated that I consider his action in combating the monopoly of the Waters Pierce Oil Company has been beneficial to Mexico, since, as I have repeatedly stated, my government shall always endeavor to oppose monopolies."

If Madero lives up to what he says there is every reason to believe that some of the projected deals whereby American marketing companies would handle a portion of the Pearson production may be carried out. Advices to THE JOURNAL printed elsewhere in this issue, indicate that some of the proposed deals were held up because the American companies did not care to take chances with the new government. It is quite likely that Lord Cowdray's visit to Mexico at this time was for the purpose of securing from the government a statement of its policies and he has evidently succeeded in his mission. With the political barriers razed, there still remains much work to be done before the actual "menace" of Mexican oil will be a reality.

England experienced the first gasoline famine during its railway strike and the inconvenience was remarkably noticeable. Rules and regulations practically preventing storage of any quantity of petrol were responsible for the shortage.

GOOD CRAWLERS IN DEMAND.

An enterprising writer occupies almost a page of the valuable Chicago Record-Herald space with a human interest story covering the "romance of Illinois' subterranean treasure vaults." His concluding paragraph indicates that oil operators have been all wrong in their crude efforts to "exploit the capricious substrata of the earth;" there is a fortune in store for the one who would crawl for it:

"Illinois now has ten refineries, and it is said oil production in the state is still in its infancy. Geologists assert that two-thirds of the area in southern Illinois is available as oil territory. In Bridgeport, after one well has run dry, they drill it a little deeper and discover another. As many as four wells have been drilled through different strata of sands, and it has been conjectured that there may be three to five bores below that. The possibilities of the Illinois oil fields, if scientists are to be believed, are limited only by man's ability to crawl under the surface of the earth."

One intrepid broker on the New York "curb" market bought five shares of Standard Oil stock Tuesday, paying $340 a share "ex-subsidiaries," that is, excluding the stocks of the subsidiary companies, which are to be distributed among the old stockholders. He also purchased these subsidiaries, to be delivered when issued, at the rate of $325 for the stock that will go with each share of the old issue. Standard Oil, as now understood, will mean the New Jersey corporation, which will undoubtedly retain that title and continue to conduct a general refining and marketing business. Trading in the stock is supposed to have been discontinued September 1. It is probable that any trading at present will be for the purpose of fixing an approximate value where a transfer of the old stock is necessary in a business deal.

HAS IT FIGURED OUT.

The following "special" from Port Arthur indicates that the writer thereof was star-gazing:

"A 1,200-barrel tank of gasoline was ignited by lightning at The Texas Company refinery at Port Arthur on the afternoon of August 17. Information that the greater part of the contents of the tank was saved by pumping was given out by the management of the refinery, but knowledge of the amount of oil lost was withehld. As ignition occurred at 4 p. m. and as the burning continued until after midnight the inference is that the tank was full. The gasoline burned without any smoke whatever in the earlier stages of the fire, appearing at a distance like a huge torch. After night smoke was observable, but it was thin and hazy compared to the smoke of crude. Ignition presumably occurred at a high altitude through the transmission afforded by ascending vapor fuses from tank emanation, as the audible volume of accompanying thunder indicated distance."

Mexico consumes about 4,500,000 tons of coal and about 2,000,000 tons of coke annually. As the total output of the country is less than 1,000,000 tons each year, consumers are dependent on the United States and Europe for the remainder of their fuel supply. It is claimed, however, that at the present rate of development of the coal industry in Mexico it will be only a few years more until it will be unnecessary to import coal at all.

Don't you know, suffering householder, that what you pay the man with the watering cart for ruining the street in front of your house by keeping it flooded would pay for a good coat of oil on said street and give you a permanent, dustless roadway? —Chicago Tribune.

MEXICAN OIL'S MENACE.

HOUSTON, Texas, Sept. 4.—Much has been written recently on the Mexican oil situation, most of which has been founded on pure fiction or speculation and it is safe to assert that not since the series of articles appearing in the April issues of THE JOURNAL has any accurate information regarding the situation been printed.

Most of the recent articles have to do with the reported purchase of the Pearson interests by The Texas Company, the purchase of a large quantity of oil by The Texas Company from the Pearson concern, the flooding of this country with oil from Mexico, and the "menace" which the great quantity being produced there will be to all the producing districts of this country.

In taking up the subjects in their consecutive order, it might be well to state that no deal has yet been consummated between The Texas Company and the Pearson company. That a deal was pending between these companies is well known, but the serious illness and death of John W. Gates, who was in England at the time of his illness, in conference with Lord Cowdray, better known as Sir Weetman Pearson, has at least put a temporary check on the negotiations.

It is doubtful if a sale of the property was even contemplated as it is very unlikely The Texas Company would purchase outright a property which is suspected by the powers that be in Mexico to be a political concession under the old government and regarding which no one has been able to find out just what stand the new administration will take. That it is to interests of the Pearsons to have an American company hook up with them is not to be doubted, as the new government is known to be friendly with the American government and might be inclined to go lightly in its investigations if an American company's property was threatened.

Another feature condemning the sale theory is the fact that Lord Cowdray has spent an enormous amount of money in the development of his holdings and would hesitate to let it go unless it would be at a profit or else largely reimburse him for a portion of the moneys expended, and it is doubtful if the property is worth anywhere near what has been expended. An American company would undoubtedly make an offer on that basis which might be far below what Lord Cowdray would expect.

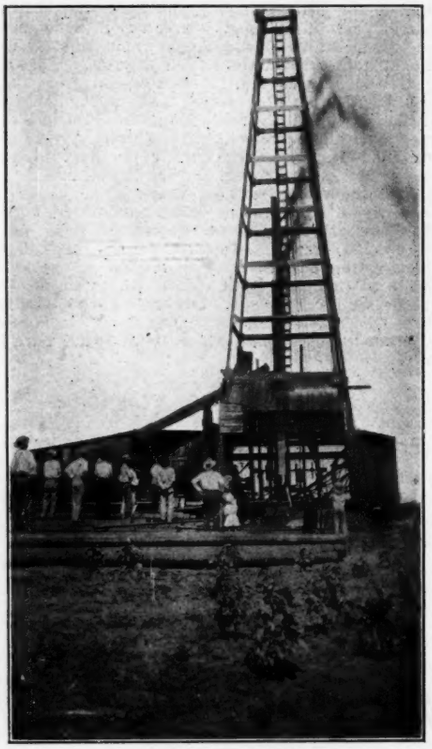
John W. Gates, just before sailing for Europe, arranged a joint conference between officials of The Texas Company and the Gulf Pipe Line Company and representatives of both companies went to Mexico and jointly made a thorough inspection of the Pearson property. The big Portrero Del Llano well was opened for the visitors and every phase of the business was gone over carefully. Before the examination was completed, Mr. Gates was taken ill and never recovered, his condition being serious from the start and the story that Mr. Gates closed a deal before he became ill, does not coincide with the facts in the case as the committee arranged by him had not even returned, to say nothing of not having reported, before his illness.

It is very likely that an arrangement was on foot to have several of the big companies handle the Pearson oil, there being 6,000,000 barrels in storage from one well, and no doubt the conference was for that purpose. It is very probable that other pipe lines and refineries owning vessels would have handled a portion of the oil with the Gulf and Texas companies getting the bulk of the business. Just what effect Mr. Gates' death will have on the deal or just how far it has gone, is impossible at this time to say, but that a deal has been closed is extremely unlikely.

The report that the Texas Company has purchased 10,000,000 barrels of oil from the Pearson company, to be delivered at its Port Arthur refinery is more unlikely than the sale story.

In spite of the statements that this country is being flooded with oil, it is stated on reliable authority that only five shipments had been received at Port Arthur and Sabine up to August 28. The first shipment was received at Sabine on May 25 and consisted of 30,262 barrels, the steamship Capt. A. F. Lucas unloading the oil at the Sun Company's docks for one of the refineries. It had been sold for commercial purposes to a Texas consumer but owing to a disagreement between the refinery and consumer, it was never delivered but placed in storage at Sabine. On May 31, the Gulf Refining Company brought up a cargo of 10,000 barrels in its steamship J. M. Guffey, the oil being unloaded at Port Arthur and on June 20, The Texas Company received its first shipment consisting of 20,000 barrels, the steamship Northtown unloading at the company's Port Arthur docks. Ten days later, The Texas Company received another shipment, this time a cargo of 9,500 barrels, the steamship Florida doing the transporting and unloading at the company's docks at Port Arthur. On August 28, the Anglo-American tanker Genessee, unloaded 19,048 barrels at the Sun Company's docks for the Higgins Oil and Fuel Company, the initial importation for that company. This shipment will probably be disposed of commercially. It is unlikely that the oil received by The Texas Company and the Gulf Refining Company was for commercial purposes but rather to make a test as to its refining qualities. A test made by one of the Gulf Coast refineries proved that particular sample of oil to be very low in gasoline and burning oil and elicited the statement from one of the officials that it was no good for refining and would prove to be nothing but a fuel oil proposition.

Thus it will be seen that altogether the receipts of Mexican oil in the Gulf Coast ports amount to less than 100,000 barrels and while it is not known at this end how much is being received in the northern ports, as stated by some of the space



DAVIS WELL IN ELECTRA, TEX., FIELD FLOWING AFTER TOOLS WERE TAKEN OUT.

writers, it is unlikely that much oil is being brought in elsewhere than in the Texan ports as that state is the most interested in the movements.

The gravity of the Mexican product varies, ranging from 11° to 25°, the oil of Ebano, Cubas, and Jaltipan showing the lowest gravity and the oil of Furbero showing the highest. It is true that some 48° gravity oil has been found at San Pedro, Nuevo Leon, but not in large quantities. The Panuco well of the East Coast Oil Company shows 14° gravity and the Topila well of the same company shows 15°. The oil in the Juan Casiano district shows 20° as did the famous Dos Bocas well and the equally famous Portrero del Llano show the same. The Caracol oil is 16° gravity and the oils of Cerro Azul and Cerro Vieja show 12° and 14° gravity respectively. In the isthmus of Tehuantepec the oil at San Christobal runs from 15° to 31°, and at Macuspana a light oil from 38° to 40° is found and is used in the Pearson refinery at Minatitlan.

While it is true that large importations of Mexican oil will affect the industry of this whole country, still it is hard to see how the light oil industry will be largely affected. There is no doubt that some of the Mexican oil shows a surprising amount of refining qualities but it is chiefly as a fuel proposition that it is being considered and strikes directly at the fuel oil producers rather than at the light oil producers. While a great deal of residuum is being used to fill fuel oil contracts in the Gulf Coast states, which a large influx of Mexican oil will supplant, still the light oil is not refined for the residuum and the refineries will continue to run whether the residuum is used or thrown away. But the fuel oil producer does not have this comforting thought, for with the introduction of Oklahoma and Caddo oil into the refineries, he has had to be content with taking his oil into the fuel oil market and it is this market that Mexican oil directly threatens, and when that avenue of disposing of his wares is closed to him there is nothing left to do but to quit.

Already has he felt the menace, although as has been stated above, less than 100,000 barrels has been brought into his bailiwick and only 30,000 barrels of this amount for commercial purposes, and he has seen his market reduced to a point where there is but a small margin of profit and if it goes still lower, he will be forced to quit, and this before any real competition has been felt and based solely on the outlook for the future. To protect their interests the small producers intend holding a meeting in the near future to try and see what can be done to have a duty put on the Mexican imports, believing that this is the only way that they can remain in business and operate on a profit.

That the Mexican situation is merely a menace and not an active factor is seen in the fact that at present oil cannot be imported under present conditions to compete with Gulf Coast oil as a fuel. Granting that oil can be purchased at 30 cents at the well, which is an extremely low price, the marine charges amount to 15 cents per barrel, which does not include port charges of 17½ cents per barrel, nor handling charges at both ends, no small item in itself, and taking all these things into consideration, it is doubtful if oil can be laid down at Texas points for less than 60 cents at the present time. While it is true that the pipe line companies are paying more than 60 cents at present, it must be considered that they are receiving oil where they have pipe lines to handle it with practically no expense.

Of course, it will be a different matter when the Texas companies get interested in Mexico themselves, as they will undoubtedly be able either to buy or produce oil cheaper than 30 cents and that is the time that the fuel producer is dreading as it will be a knockout for him, but until that time comes, the menace is merely a threat and not a deed.

The East Coast Oil Company of Mexico, a Southern Pacific subsidiary, put the first real deal through when it sold half of its production to The Texas Company in exchange for residuum delivered at North Texas points and made an agreement with that company to transport the remainder of its production. Deliveries on the contract will begin about October 1 and the Rio Bravo Oil Company, another Southern Pacific concern, is building a tank at Galveston to store a portion of the oil in, other deliveries to be made at Port Arthur and Galveston. The East Coast Oil Company is completing a pipe line from its Topila well to the river and J. M. Shaw, superintendent of the Rio Bravo and assistant manager of the East Coast Oil Company, is in Mexico looking after the work.

At present, Mexico has a production of probably 150,000 barrels daily with approximately another 100,000 barrels shut in, on account of lack of storage. In addition a number of wells have been drilled into the sand and are only waiting on adequate facilities for handling the oil before being brought in. The Portrero Del Llano well is just as good today as when it was shut in about five months ago, as it was opened for the benefit of the officials of the Gulf and Texas companies on their inspection trip and pronounced by them to be good for at least 75,000 barrels. The well flowed about 400 feet in the air, the stream of oil looking to be about the same diameter as a barrel.

Much has been written and said about the big wells of Mexico, but little or nothing has been heard about the dry holes, which are legion. While there must be immense quantities of oil in the country as evidenced by the well just mentioned, the Dos Bocas and the big well, No 7 of the Huasteca Petroleum Company, still it must be remembered that these are exceptions and only secured after many tests which proved failures.

A. V. B.

PRODUCERS OIL STATEMENT.

Announcement is made from Houston, Tex., that the Producers Oil Company has retired an issue of $1,000,000 6 per cent convertible bonds. The bonds were held by the Trust Company of America, with headquarters in New York City, and were issued on November 1, 1906, by the president of the Producers Company, W. B. Sharp. A mortgage or deed of trust was held by the Trust Company of America on all of the holdings of the Producers Company, including all leases, property, franchise and other assets. The notice of retirement of the bonds was filed Friday in the office of the county clerk of Harris county and was in the nature of a quit-claim deed issued by William Gilman Low Jr. of New York, vice president of the trust company. The quit-claim filed is an acknowledgment of payment of the interest and principal of the $1,000,600 6 per cent gold bonds and statement of the fact that the bonds have been returned to the Producers Company for destruction.

The annual statement of the Producers Company, issued from the Houston office on August 30, covering the fiscal year ending June 30, 1911, was as follows:

PRODUCERS OIL CO., JUNE 30, 1911.

Assets.

Investment, including real estate, leases and operated properties	$7,565,585.37
Accounts and bills payable	506,140.47
Cash on hand	66,161.84
	$8,137,887.68

Liabilities.

Accounts and bills payable	$ 709,409.24
Sinking fund	550,000.00
Six per cent gold debentures	3,000,000.00
Capital stock	3,000,000.00
Surplus	818,478.44
	$8,137,887.68

STORAGE OF PETROL IN ENGLAND.

The recent difficulty which has been experienced throughout the length and breadth of the land in securing adequate supplies of petrol owing to the strike of railway workers must be plainly suggestive that the time has come when the regulations governing its distribution and storage should be amended in accordance with present day requirements. During the whole time of the labour disturbance there were ample supplies in bulk upon the river storages of the Thames, and yet all over the country retail prices ran up to famine figures owing to the fact that it was impossible to secure deliveries from the bulk storages. All this trouble could easily have been remedied if we but lived in an age when regulations are kept abreast with or ahead of present day requirements. As a matter of fact, the storage of large quantities of motor spirit at garages is prohibited, while even dealers are under the most strict rules regarding the quantities they are allowed to store. It is well known that, in the majority of cases, the average retailer is not allowed to stock more than, say, a few dozen cans, and thus he is totally dependent upon the distributor paying almost daily calls in order to replenish his store. With trouble such as we have just passed through, it is easy to see how the whole supply at the disposal of users of motor spirit can be consumed in the course of two or three days, with further deliveries out of all question. Surely it is time the authorities recognized that the motor-car has come to stay, and consequently that it is a matter of the utmost urgency that adequate supplies of the necessary power should always be available, in spite of strikes and lock-outs.—Petroleum Review, London.

BAKU JUNE PRODUCTION.

The total production of crude oil on the Baku oil fields during June amounted to 37,551,560 poods, of which 9,053,308 poods were produced at Bebe-Aibat, and 28,498,252 poods on the old areas. The above quantities include 3,053,104 poods obtained from spouters. The production at Surakhany during the month amounted to 531,567 poods of black oil (including 264,400 poods obtained from spouters), 13,325 poods of white oil, and 185,500 poods of natural gas.

The steamship Appalachee is due at Sabine in the next few days and will load out 35,000 barrels of refined oil to Europe, the Magnolia Petroleum Company shipping the oil. This is the first foreign shipment of the Magnolia company since its reorganization.

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TRADE NOTES

The Century Oil Company has sold its lease on the Minear farm, southwest of Bowling Green, O., to David Eckler for $9,000. A net production of the lease is 28 barrels per day.

Consul Alexander V. Dye, of Nogales, states that Mr. Manuel Mascarenas, of that place, is drilling for oil on his ranch in the state of Sonora. Should oil be found, there will be a demand for machinery for the further development of the field.

The ladies of the Brownsville civic league of Brownsville, Tex., have raised $4,000 for street oiling purposes and work has already begun. The citizens of Matamoros, Mex., Kingsville, San Benito and Mission are contemplating oiling the streets of their respective cities.

The Colorado-Utah Mines and Oil Company, which is operating in the Wayne county, Utah, field at Loa, with offices in Denver, Col., proposes to build a railroad from Milford on the San Pedro line to Green River on the Rio Grande. The company has 24,000 acres of oil land under lease.

A contract has been signed by Mayor William Mayher of Greeley, Col., for the municipality with the Continental Oil Company which has agreed to furnish a carload of oil for experimental purposes on the city streets, if Greeley will pay the freight. The experiment will be made at once.

The Baltimore Oil Company has filed articles of incorporation at Bakersfield, Cal., with a capital stock of $1,000,000. Its main offices will be in Los Angeles. The incorporators are J. W. Wallace, Warren Wallace and F. L. Hamilton of Los Angeles, N. Landsburg of Ocean Park and C. L. Cooper of San Diego.

The Standard Oil Company will begin work at once on the erection of six concrete and brick buildings at Canton, O., costing about $125,000. The structures will form the Canton headquarters for the company and the old building which has been outgrown will be torn down. The company has bought a tract of nine and a half acres for the improvements.

The Lawrence-Greene Oil Company, of Indianapolis, Ind., is drilling a test well on a 2,000-acre tract about two and a half miles north of Springville, Lawrence county, Ind., on the Simpson Chambers farm. The United States Geological Survey marks a point on the land as the highest in the state. Byron W. Barge is president of the company and John T. Huntington, secretary.

Except in a zone 50 miles in width along the border, the mining laws of Mexico do not discriminate against the foreigner. A foreign company, partnership, or individual may conduct explorations, denounce mines, and obtain mineral grants under the same terms and conditions as a Mexican citizen. To enjoy these privileges not even residence in the Republic is necessary, since both the denouncement may be made and the title secured through a representative.

A meeting of the directors of the Providence Oil and Gas Company was scheduled for last week at Birmingham, Ala., at which time it was proposed to increase the capital stock to $2,000,000 and to authorize the board of directors to contract a bonded indebtedness of $1,500,000. The company has a large area under lease and has obtained some good gas wells. It is the intention of the company to continue development work on a large scale.

The report of Dr. Day in charge of statistics on the oil and gas production of the United States, will soon be issued by the Geological Survey. Dr. Day has been hard at work on the final revision of the work and is now able to see the end. He thinks the report will be out within another month. He is just back from an extended trip to Oklahoma and other Southwestern fields where he made some personal inquiries for use in his review of the production of oil and gas.

Reports of the state board of tax commissioners of Indiana bear evidence of complete approval of the assessment for pipe lines throughout Grant county, as prepared some time ago by Deputy Auditor Mort McRea. The Indiana Pipe Line Company heads the list with $314,580. The Marion Gas Company shows a valuation of $34,694. The Huntington Light and Fuel Company property is valued at $27,240; the Indiana Natural Gas and Oil Company at $66,575 and the Ohio Oil Company at $311,965.

Miss Hermania Kaessman, formerly of Rochester, N. Y., the school teacher who formed a $175,000 company at a Rochester tea party to buy and operate a Kansas oil refinery, is bankrupt. She filed a petition in bankruptcy, giving her liabilities at $107,200 and her assets at $200. Miss Kaessman, the first woman in the world to operate an oil company, organized the Sunflower Oil and Refining Company at Rochester four years ago and a refinery was built at Niotaze, Kan. The company went into the hands of a receiver.

A special meeting of the directors of the Columbus Gas and Fuel Company was held at Columbus, O., August 30, at which time the regular quarterly dividend of 1¼ per cent on the preferred stock was declared. It is payable October 1, to stockholders of record September 15. The first regular quarterly dividend of one half of one per cent on the common stock was paid September 1. Through an oversight the dividend on the preferred stock was not declared at the regular meeting August 20, and a special meeting had to be held.

The Brokaw farm, located in Bolivar township and the corporation of Richburg, N. Y., was purchased last week by Robert Dermitt of Richburg for $3,800. The property was owned by Mrs. E. J. Moore and Mrs. Mayme Taylor and was sold by R. L. Brown, who had an option on it. Mr. Dermitt will take possession at once. The farm comprises

BRICE KINNIG AND SAM BELL TAKING IN THE ELECTRA, TEXAS FIELD.

100 acres, on which are three oil leases. McCarthy & McDonnell of Bolivar have eight producing wells on the farm; J. R. Wetherby of Richburg has four, while Mr. Dermitt has several. The oil and gas rights were included in the deal.

An American consular officer in a Latin-American country reports that a railway company operating in his district desires to receive offers from American owners of coal or fuel oil. The company in question operates 100 miles of railway (with 11 locomotives, 27 passenger coaches, and 103 freight cars) and also a line of two steamships running to foreign ports. A third ship will be placed in operation about the end of this year. Communications should be addressed to the general manager of the company and may be in English. The address can be obtained by writing the Bureau of Manufactures, Washington, D. C., File No. 7277.

The state of New York is looking into the matter of the origin of forest fires in the Adirondack preserve, and the conservation commission has instructed its counsel, George V. S. Williams, to request the public service commission to set a date for the resumption of the investigation recently started on application of James S. Whipple, as forest, fish and game commissioner, to compel the Brooklyn Cooperage Company to use oil fuel upon its locomotives in the Adirondacks. The company operates about 25 miles of railroad and uses coal burning locomotives. Several fires have been started by sparks issuing from the engines and it is the desire of the commission that oil be used as fuel in the future.

Vice Consul Charles F. Brissel, at Amoy, China, writes as follows in Daily Consular and Trade Reports: "On July 11, 1911, a British firm of this city received its first consignment of kerosene oil. It has now entered the local market as competitor of the Standard Oil Company and the Asiatic Petroleum Company, both of these companies having been established here with expensive installations for more than five years. The present consignment is 28,500 cases of oil, the entire shipment being in tins. The intention is to continue the sale of this oil under these conditions until the sales increase sufficiently to warrant an installation. The oil has been supplied by the Texas Oil Company, and was shipped from Port Arthur, Tex., to Amoy via the German ship Asgard. Before discharging this cargo here, this ship had left about 50,000 cases at Manila and Hongkong."

PERSONAL MENTION

John A. Steel, president of the Canadian Oil and Gas Company, has returned to Tulsa from an eastern vacation.

Roy Blanchette, representing the Republic Supply Company in the Caddo field, is the happy father of a baby girl.

Richard McGarrigle of Robinson, Ill., is contemplating a visit to the Electra, Tex., field and will leave in a few days.

J. A. Hull, of Tulsa, has gone to Chautauqua Lake, N. Y., where he will join Mrs. Hull, returning to Tulsa in a short time.

Mr. Eugene McAuliffe has been appointed general coal agent of all Frisco lines with offices in St. Louis and the office of the general fuel agent in Chicago has been discontinued.

Nathan Bushnell Jr., who has been visiting his parents at Robinson, Ill., has returned to New York City, where he is connected with Charles W. Leavitt Jr., a civil landscape engineer.

C. J. Wrightsman, formerly an attorney at Tulsa, Okla., now devoting his time to the oil business, has returned from a trip to California, satisfied to settle down and take his chances in the Oklahoma fields.

J. H. Evans and J. M. Clover of Tulsa, accompanied by Harry Heasley, of Emlenton, Pa., have been to Putnam, Callahan county, Texas, looking over the prospects there, later returning by way of Electra.

A. M. Hepler has been transferred from the Caddo field to the new North Texas field, Electra. Mr. Hepler had charge of the Corsicana Drilling Company's affairs at Caddo and his change is merely one of location.

Percy C. Corey, manager of the Burmah Oil Company of Burmah, India, was married to Miss Mary Miller at Windsor, Canada, August 26. Mr. Corey has been in India for the past nine years, returning to this country a few weeks ago.

A. E. Barker, formerly identified with the Keystone Belting and Supply Company has accepted a positon with the Venango Oil Company, and will open offices for the concern in the Brandt building, at Norristown, Pa. Mr. Baker is well known in the oil business and will make a good addition to the company's force.

H. H. Argue, of Buffalo, N. Y., was a caller at the St. Louis office of THE JOURNAL, en route to Tulsa from Buffalo. Accompanied by O. W. Compton, he made a trip to Electra and will soon proceed to Los Angeles to spend the winter. Watson, who recently moved from Lima to Buffalo is also planning a sojourn in California.

Hon. Joseph W. Folk, former governor of Missouri, spent several days in the Oklahoma field looking over oil properties. Inasmuch as Mr. Folk is a candidate for the next Democratic Presidential nomination, oil men generally will be interested in knowing that he might be listed as a producer and in case he ever did get to Washington would know something of the producer's troubles.

D. B. Slick was a St. Louis visitor this week, on his way from Oklahoma to Bridgeport, Ill. Mr. Slick hails from Clarion, Pa., and has been look-

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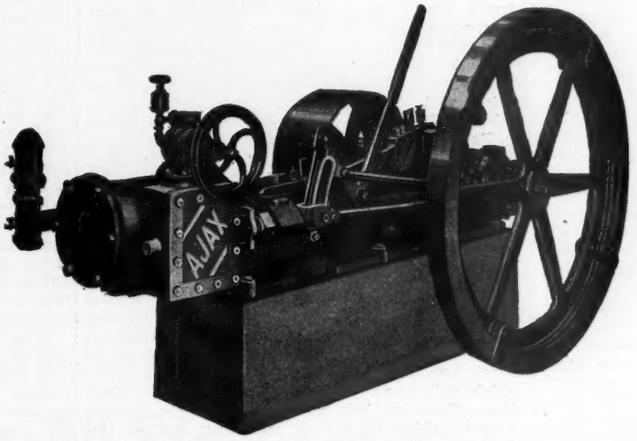

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ing after Oklahoma leases in connection with Shaffer & Smathers. Under the firm name of Slick & Jones he is interested in a large block of leases south of the Pawnee field and is preparing to drill a rank wildcat twelve miles south of Jennings.

B. L. Love, secretary and treasurer of the Nypo Oil Company, with headquarters at Joplin, Mo., was a caller at THE JOURNAL office this week. Mr. Love has been operating in the Mid-Continent field for some time, having rounded up a nice little production at Muskogee. He is also interested in the mining business in the Joplin district and has been successful in both oil and mining operations. Accompanied by his son he has been spending the past month on the Lakes, returning home from Chicago by way of St. Louis.

IN THE COURTS

In the case of the city of Newark, O., against the Newark Natural Gas and Fuel Company, being the action brought to enjoin the gas company from raising the rates for natural gas in the city of Newark, the plaintiff has filed a demurrer to the second and third defenses in the amended answer. These defenses allege that the rate at which the gas company has been furnishing gas to the citizens of Newark for the past ten years, and which rate the ordinance of council sought to establish for the next five years, does not yield the company a proper income, and it is therefore contrary to the provisions of the state and federal constitutions, which say that private property cannot be taken for a public purpose without compensation.

In the suit filed by E. J. Boust, L. Samuels, J. F. Dover, C. F. Wood, Joseph Moshier, H. P. Umbson, G. F. Hoffschmidt, and B. L. Cadwallader against the American Oilfields Company, restraining them from further drilling operations on section 14-30-23, McKittrick field, Cal., Judge Mahon has granted a restricting order. The land in dispute comprises 640 acres and is in new territory, which, according to the plaintiffs, was entered upon April 12, 1910, and papers filed under the mineral land act, the purpose of the plaintiffs being to develop the land for its gypsum deposits, which is said to abound in large quantities. On August 24 the American Oilfields Company jumped the land and placed 18 men in possession. These men are also named as defendants in the suit. Until the present injunction is released or made permanent by the court, the American Oilfields Company will discontinue all development work on the property.

Two suits on file in the Federal District Court at Los Angeles mark the beginning of an effort by the government to recover all mineral lands, including those bearing oil which have been claimed under homestead entries. The suits were begun at the instance of Attorney-General Wickersham, and although only two defendants are named, scores of persons who have filed homestead entries on oil lands in the central portion of California are involved. The defendants are George Schwinn, an oil man of Coalinga, and Mattie A. Kearns, of Huron. The homesteads they claim covering 320 acres, are valued at $320,000. The government alleges fraud and deceit in the patenting of these homesteads, and asks that the grants be declared null and void. If the ruling is in favor of the government, proceedings, it is said, will be instituted against all other homesteaders whose entries cover lands that have been found to be oil-bearing.

RECENT DEATHS

J. R. Douglas, aged 68 years, died at Oil City, Pa., September 1 from diabetes. He came to the Venango county oil field during the early excitement and followed the occupation of driller and tool dresser for years.

Samuel B. Monjar, aged 50 years, died at his home at Clintonville, Pa., September 1. Mr. Monjar was one of the best known producers in the Clintonville field. He was a son of Mr. and Mrs. John H. Monjar and was unmarried. Besides his parents he leaves one sister, Mrs. A. B. Miller, of Salina, Pa.

Oscar Steele died at Chicago, Ill., September 4. He was a son of John W. Steele, formerly of Venango county, Pa., known as "Coal Oil Johnny." The son had lived for many years at Fremont, Neb., and his father went there to live with him several years ago. Oscar Steele had been in the hospital for the past month.

William Perry Lineweaver, aged 40 years, was run down and killed by a passenger train at Webb Summit, O., last week. He has been engaged in drilling wells for years and is well known throughout the oil country. He is survived by his mother, Mrs. H. E. Lineweaver, of New Straitsville, O., and Mrs. Samuel W. Dohenspeck of Mars, Pa.

William S. Magee died at Philadelphia, Pa., August 31. He was a prominent figure in the Garfield, Warren county, Pa., oil excitement. He was a native of New York and served during the Civil War as a private in Company E, Seventh P. V. C., and was a member of Eben Post, G. A. R., of Warren, Pa. The interment was at Lock Haven, Pa.

Charles Wallace DeHarte, aged 65 years, died at the Bradford, Pa., hospital, August 31, where he had been under treatment, his illness covering a period of months. He engaged in the oil business at Petroleum Center when 22 years of age and went to the Bradford field in 1876, where he was superintendent for the United Pipe Lines until 1895, retiring then to engage in the oil business as a producer. He is survived by his widow and three children, one son Lloyd C. DeHarte and two daughters, Mrs. L. E. Mallory, Jr., and Miss Marguerite DeHarte, all of Bradford. He also leaves four brothers.

James H. King, aged 71 years, died at his home in Fairhaven, Conn., August 29. Mr. King recently returned from France where he went in the hope of improving his health. He retired from active work about twelve months ago after making a fortune in the oil and mining business. For several years previous to his retirement he was closely associated with John D. Rockefeller and John D. Archbold. He and his brother, F. P. King, of Titusville, Pa., were early interested in oil developments, the deceased being a friend of the late Colonel Drake in the old oil times. He is survived by his widow and one daughter, Mrs. Sheldon H. Tolles, of Cleveland, O.

OUR FOREIGN LETTER.

LONDON, Aug. 23.—According to information which has reached the foreign trade department and the ministry of the Russian government a great change is taking place in the fuelling of boilers, particularly locomotive boilers on the Turkish railways. It is said that the Anatolian Railway Company has been engaged for a number of years making tests with petroleum fuel on two of its locomotives and that these tests have proved to be successful and convincing; so much so that the company has definitely decided to adopt entirely mazout or petroleum refuse as the fuel on its railways.

The first step in this direction will be the transformation of the fire boxes of 25 locomotives and the construction of a central oil fuel station at Chaidar-Pasha, which is the chief station on the Anatolian Railway. Besides this, tanks will be installed at various points along the line. This decision includes the adaptation of the furnaces of the remaining 75 locomotives belonging to the company to the use of oil fuel within a period of three years. To the foregoing information it is worth adding that statements appear in the press to the effect that the Baghdad Railway Company has decided to construct a central oil fuel store at that point on the Mediterranean Sea where the Baghdad railway will find its outlet, namely Alexandretta, which, by the way, constitutes the first German port on the Mediterranean Sea, a port that the country has so long coveted and which comes under the influence of Germany by reason of the alternative line not long ago decided upon to connect the said sea with the famous Baghdad railway.

The Oriental railway companies too are also disposed to adopt oil fuel and have determined on transforming the furnaces of 75 of their locomotives. At the same time opportunity is taken to add the information that the Turkish Ministry of Marine has taken a lively interest in these tests and proposes adopting oil residue as fuel for torpedo boats. The Scheraket Chairie Steamship Company which runs the passenger service on the Posphorous is likewise showing a deep interest in this method of fuelling boiler furnaces.

While heavy oil fuel has been a practical question in Russia for many years, another market has been developing with what may fairly be termed astounding rapidity; that is the market for very light oil products for use in auto and aeroplane motors. Here we have no longer to deal with residue. On the contrary it is the very opposite end of the scale. Residue presumably, and as a matter of fact is, all that is left after the best has been taken out of petroleum, and that has been found to be a valuable fuel, so valuable indeed that very shortly and for a long time after it was discovered, it was worth more on the market than the distillate of petroleum, simply because it proved to be such a convenient fuel and there was so little of it to meet the demand. Meantime the most valuable element in the petroleum from the motor fuel point of view was simply evaporated into the atmosphere, no effort whatever having been made to trap it.

It is well known in the petroleum industry that where petroleum outcrops, the most valuable portion of it has probably already disappeared because of its volatile nature, and the exposure to the atmosphere so facilitates its evaporation as to leave the petroleum obtained from outcrops a relatively heavy oil. It is not so with petroleum that has had to be drilled for before it was known to be present. All its constituent elements, good and bad, are there, and if it is in sufficient plenty it will pay to erect a benzene factory in the immediate neighborhood with an efficient refrigerating plant to retain these volatile elements until they find their way into the distillery, and are taken off seriatim at their respective boiling points. Thus we do get, as is already done in America, such products as regoline, etc. These are exceptionally light and of course have to be handled with the greatest care to obviate explosion.

It is to these products that the Russian oil producer is now turning his attention, the more so as the recently discovered petroleum field—Maikop—happens to be rich in the class of oil containing volatile parts. The new industry is not so applicable to Baku where the oil is naturally heavy. There is a lighter oil at Gronzy from which benzine can be conveniently taken and a factory has been in existence there to remove and recover this valuable constituent, but at Maikop the oil is lighter still, and little doubt is entertained in technical Russian oil circles that if the problem of separation and recovery be dealt with boldly and on a sufficiently large scale, the Maikop oil field will turn out in this respect alone to be indirectly a gold mine.

It is interesting in this connection to note that during the first six months of operations, including two and a half months when the pipe line was opened and the various discovered wells were untapped and allowed to deliver their oil, the quantity produced amounted to about 4,500,000 poods, and as this is only the beginning of regular production on this new field, it can be judged what a large quantity of volatile fuel that district will soon be able to put on the market.

It must be remembered in this connection that in the Caucasus, as well as in America, natural gas is very plentiful and it will be quite possible for the industrialists there to extract these fuels from the gas as also from the oil.

With respect to other features in the trade the most noteworthy is the great increase in the value of residue which has reached such a level that fuel consumers once more, it is said, are turning to coal after having abandoned coal to return to oil fuel when the prices fell so seriously some time ago.

There is little if anything new to be said on productive development on any of the fields excepting the Maikop field referred to above. Grozny maintains the increase in quantity that has been such a remarkable feature in its production in the last year or two. Baku has not so much to say for itself and probably will not until more lands are opened for exploitation, and for the matter of that, perhaps never will again reach the level that its industrialists look back to with such regret. Fires have been fairly plentiful both in the Caucasus and on the Island of Tcheleken; but away in the North at Uchta where the government is drilling with some assiduity, little has been discovered to justify the great hopes that have been expressed in respect to that area.

The oil market on the London stock exchange continues in a narrow and weak condition. Speculators were so badly hit over the last boom that the cautious attitude adopted by the public can be readily appreciated. At the same time, prices have suffered such a severe slump that a few of the steady dividend-paying concerns, such as Californias, look cheap, but there has not been a sufficient number of bull points to encourage fresh buying. The continent has ignored Shells. Spies have fallen on the decreased production and the reaction in the price of crude oil. Maikop

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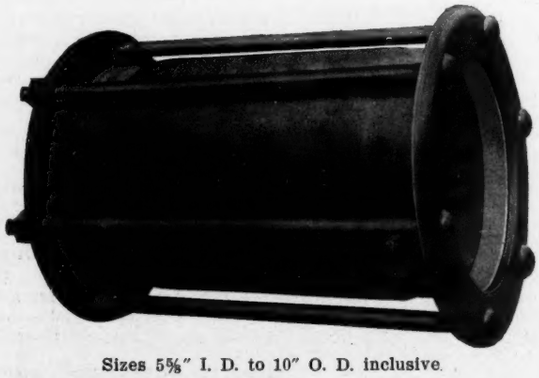

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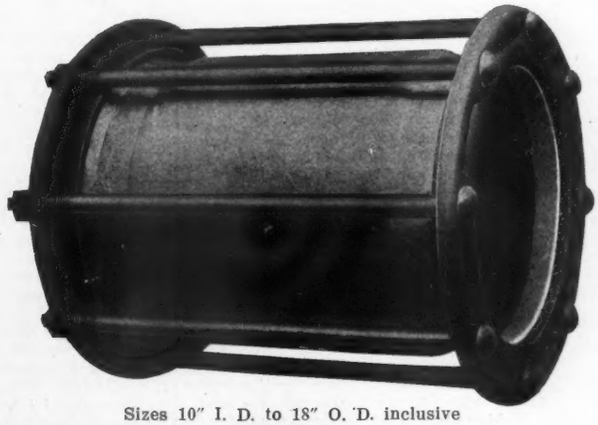

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issues remain under a cloud, and prices continue to sag.

Several projects have been prepared for the flotation in London of California oil properties. Two of these at least have been delayed considerably by the dullness of the share market in London, by the little confidence displayed by the public towards new oil ventures, and by difficulties of underwriting. An extension of sixty days of the option taken in California by one of the promoting groups has recently been granted, but whether that length of time is sufficient for the restoration of the oil share market to public favor may be considered somewhat doubtful.

California produces some of the best drillers in the country. A large company of these, it may be remembered, sailed for our East Indian possessions in the early part of this year to carry out field operations for the Burmah Oil Company under the charge of Thomas Hayes. Another well known driller, A. L. Barnes, has recently sailed for Upper Burmah under a similar contract. The fact that such a large and prosperous concern as the Burmah Oil Company has thought fit to engage this body of experienced operators is much commented upon in oil circles. The California men are at work in the Khodoung field, Upper Burmah.

Several references have been made recently to the rates at which illuminating oil is disposed of in the United Kingdom a figure of 5½ cents or 5 cents per gallon having been quoted as an example. As a matter of fact, it is known in certain circles that good illuminating oil can be had in quantity at prices very far below this figure. In a case which came under my own observation recently a considerable quantity of illuminating oil, bought in the ordinary market and under no special favor by way of conditions, changed hands at a price which, when the sale of the barrels which contained it is allowed for, figures at considerably less than two cents per gallon. It may be added that the barrels brought about the ordinary market rate.

The recent meeting of shareholders in the Scottish oil companies is said to have disclosed a surprising lack of enthusiasm for the proposed combination. No indication was forthcoming as to the extent of the support which the movement had obtained, and the ventilation of opinion, which the chairman invited, did not disclose many new facts. The objections naturally grouped themselves into two categories, those which dealt with the financial aspect of the companies and those which were concerned with their physical attributes. In the former category almost the sole new fact elicited was the announcement that the directors had already had the refusal of an offer by which it was proposed to buy out the companies for approximately $15,000,000.

The production of crude petroleum in the first half of the present year in Roumania amounted to 692,999 tons, as compared with 698,700 tons in the corresponding half of 1910, or a reduction of 5,701 tons. The Bustinari district is credited with 167,011 tons out of the total, Moreni with 220,174 tons and Campina with 126,790 tons in the corresponding six months respectively. A modification of the law of 1909 is proposed by the present government in regard to the working of the state oil lands. According to this law, the state oil lands were to be leased to the extent of 75 per cent, the remaining 25 per cent being reserved at the disposal of the state. It is now proposed to lease the fields to a private company with the participation of the state in the undertaking.

Great activity in the oil industry is reported from Burmah, which might be regarded as somewhat surprising in view of the keen competition now being offered in all far eastern markets by the Standard Oil Company and the Asiatic Petroleum Company, the latter being the far eastern representatives of the Royal Dutch Shell Transport Combine, the great opponents of the Standard Company. It is more than probable, however, that this attempt to increase the output is due to the desire to cheapen the cost of production by the maintenance of a big turnover. Domestic producers are protected in the Indian market by an import duty of 3 cents per gallon, but, despite this, the Standard Oil Company is still able to sell very large quantities of burning oil in that market. It is a moot point whether the Indian market is capable of much further expansion. However, it still remains a very important market for both domestic and foreign producers and in addition to absorbing about 240,000,000 gallons of home production affords a market for about 80,000,000 gallons of foreign petroleum. There are other far eastern markets which are capable of great expansion, and these are being very energetically catered for by the Standard Oil Company. REISS.

THE PETROLEUM TRADE OF INDIA.

According to the report of Mr. Noel Paton on the trade of India during the past year, printed in Petroleum Review, the imports of mineral oils in 1910-11 had a total value of £2,258,700, as against £2,097,000 in 1909-10. Of the total quantity imported in 1910-11, 70 per cent. was kerosene, which by itself amounted to 56,600,000 gallons, with a value of £1,589,900, as compared with 64,050,000 gallons with a value of £1,674,100 in 1909-10. The decrease was 11.6 per cent. in quantity and 5 per cent. in value.

The following statement shows the quantity and value of kerosene imported in each of the last two years. The imports into India proper from Burma are added at the foot:

	Quantity. In Thousands of Gallons		Value. In Thousands of £'s.	
United States	41,259	35,292	1,180	1,016
Roumania	1,229	.....	26	.....
Straits Settlements.	6.577	2,090	118	53
Sumatra	4,692	5,882	103	164
Borneo	6,985	7,469	155	196
Russia	3,304	5,842	92	106
Other foreign countries	4	23	.....	1
Total foreign countries	64,050	56,598	1,674	1,590
Coastwise from Burma	81.275	91,868	1,685	2,214

The year's trade has been notable for the rate war which broke out in August between the Standard and "Shell" interests and involved Burman companies. The popular belief is that the conflict resulted from over-production, from the appearance of new competitors and from consequent jealousy regarding supposed or expected encroachments on the spheres of conventional rights of the respective companies. The aggregate reduction of rates from August 15 to the end of March ranged approximately from 9 to 19 per cent. This, of course, does not mean that the loss over the trade at that period amounted to 9 to 19 per cent., for the fall of prices was gradual and irregular. It is more difficult to ascertain whether the reduction of price has induced expanded consumption. Opinions on the subject differ, and comparison with past years is vitiated by the heavy speculative buying that took place during the six weeks' rate war in March-April, 1909. But, if an average be struck on the two years 1909 and 1910, we find a weekly consumption of about 330,000 units of two tins, or eight gallons, against which it has been estimated that the consumption for the first 17 weeks of 1911 has been at the rate of about 354,000 units. There have been rumours of peace, and, after the closing the financial year, recoveries of rate were noticeable in some quarters; but the flotation of new companies, not only in India but elsewhere, complicates any proposals for agreement. In India alone seventeen new companies were registered in 1910-11 for the production of petroleum, eight with rupee capital and nine with sterling capital, the total figure representing about £3,753,400. It cannot be asserted that saturation point has been reached; but, on the whole, it is surprising that the low rates prevalent since August, 1910, did not more greatly stimulate consumption, and the inference probably is that there is a limit to the supply available at low prices. The quantity is less by something like 26,983,000 gallons than was recorded in 1908-09, but that year's trade, as has already been stated, was largely swelled by speculative purchases during the short rate war that occurred towards its close.

From the figures given above it will appear that, excluding Burma's unascertainable internal consumption of indigenous oil, India has, on the average of the last two years, absorbed kerosene at the rate of 146,900,000 gallons per annum. The decrease in the total imports from foreign countries in 1910-11 was 7,450,000 gallons or 11.6 per cent., while the increase in visible consumption was 3,250,000 gallons or 2.2 per cent.

In 1909-10 Burma oil formed 56 per cent. of the total visible consumption, and her share seems to have advanced to 62 per cent. as a result of an expansion in her shipments concurrently with a heavy decline in imports. The advance in shipments from Burma to India was one of 13 per cent. in quantity and 31 per cent. in value.

The share of the United States in the visible consumption in the last two years was 26 per cent.; and her share in the foreign imports of the year under review is 62.4 per cent., as compared with 64.4 per cent. in 1909-10. In 1910-11 she decreased her shipments by 5,967,553 gallons, or 14.4 per cent., and by a sum of £164,100.

It would probably be well to group Borneo, Sumatra, and the Straits Settlements; and if this be done the group takes second place, contributing 11.5 per cent. of the visible consumption in the last two years and 27.3 per cent. in the imports of 1910-11. It is impossible to say as yet how much of the shipments by way of the Straits Settlements came from each of the other sources in this group; so no purpose would be served by specific analysis. The decline in receipts from this group of sources was 2,813,772 gallons in quantity (15.4 per cent.), but the value increased by £37,700.

The share of Russia in the visible consumption is 3.9 per cent., and in the last year's imports 10.3 per cent. Her improvement was one of 2,538,200 gallons or 76.8 per cent. and of £67,100. Russia's contribution was 5,841,988 gallons and £159,500, against 3,303,788 gallons and £92,500 in 1909-10.

In 1909-10 Roumania sent 1,230,000 gallons of kerosene oil, while in the year under review she does not figure at all.

Bulk oil formed 78.2 per cent. of the total foreign imports, in place of 74.7 per cent. in 1909-10, the total quantity received in this form being 44,258,781 gallons as against some 47,830,000 gallons in 1909-10 and 61,030,000 gallons in 1908-9. Of the total America supplied 52 per cent., Russia 13.2 per cent., and Sumatra, Borneo, and the Straits together 34.8 per cent.

The remaining 21.8 per cent. of the whole was case oil. The quantity was 12,338,953 gallons, and of this America supplied 99.6 per cent., and Sumatra, Borneo, and the Straits .015 per cent. The increase in the price was due to the enhancement of duty on kerosene oil towards the close of 1909-10.

Imports of fuel oil, on the other hand, made a striking advance from 1,481,424 gallons to 7,102,008 gallons, with a value of £54,900. The causes of so large an increase in this particular year may remain the subject of conjecture. Of this, 43 per cent. came from Borneo and 47.7 per cent. from the Straits as entrepot. Bombay, which in 1909-10 took 673,162 gallons, increased this by 40.3 per cent. in 1910-11 and took 944,327 gallons. Madras also took 278,769 gallons more than in 1909-10, and her total rose to 842,666 gallons as compared with 563,897 gallons; while Bengal made a great stride with 1,527,555 gallons against 244,351 gallons in the previous year. Karachi has ceased to import, while Burma for the first time appeared as buyer and took 3,787,460 gallons, valued at £28,000.

Imports of other mineral oils, mainly for lubricating, advanced from 11,946,392 gallons to 15,951,710 gallons or 35.5 per cent., and imports from Burma into India proper increased by 6.4 per cent. to 4,634,800 gallons.

The German steamer, Standard, is due at Sabine on Sept. 7 with a full cargo of Mexican oil consigned to the Magnolia Petroleum Company.

The Texas Company's cannery resumed work again on September 1, after a two-weeks lay off. The concrete docks and warehouses are practically completed and the work of canning will be continuous from now on.

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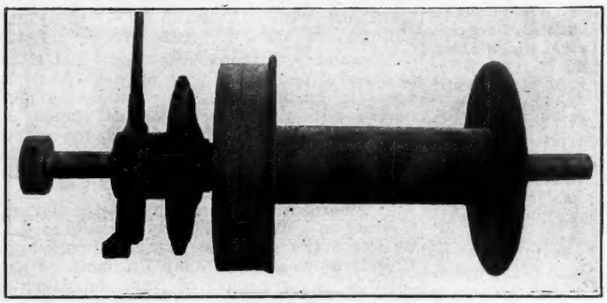

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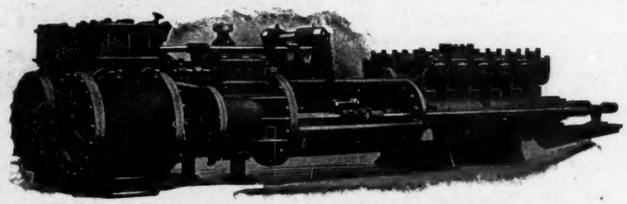

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Oil Fuel and Its Combustion

Compiled by Lieutenant A. T. Church, U. S. Navy.

The liquid fuels commonly known are crude coal tar, tar and creosote oil, shale oil, crude petroleum, and petroleum residue or refuse. The first three cannot be considered for navy use on account of insufficient supply, although they are used to a slight extent in the merchant marine and in foreign navies.

Crude coal tar is formed during the destructive distillation of coal for the production for coal gas. It contains in its crude condition so much solid matter that it can only be employed with very unsatisfactory furnace arrangements.

Tar oil is obtained when tar is distilled. First the light oils pass over, from which benzine and its homologues can be obtained; then heavy tar oil, from which carbolic acid is made; then pitch, from which anthracene is separated. The heavy tar oil obtained in this way from coal tar is often called creosote, and forms a fairly good liquid fuel. Its specific gravity is greater than that of water, being about 1.1, and it is known as heavy oil. The oil obtained from blast furnaces is sometimes used locally for fuel under the name of phenoloid. Both creosote and phenoloid have the great disadvantage that in closed firerooms they give off fumes, probably of acrolin, which painfully affect the eyes.

Shale oil comes mostly from Scotland, and is obtained from the shales. The shales differ from coal in that they are a mixture of hydrocarbons and mineral matter instead of carbon with hydrocarbons. When heated to redness in a retort they do not form coke, but leave 70 or 80 per cent of mineral matter. The oils pass over at about 900 degrees F., and when refined yield about the following: Naphtha, 6 per cent; burning oil, 32 per cent; heavy oil, 24 per cent; paraffin scale, 12 per cent; loss, 26 per cent.

The heavy oil is used as fuel. It is heavier than water, has a high flashing point, and makes an excellent fuel.

Petroleum.—There are three kinds of petroleum in use, namely, those which on distillation yield (1) paraffin, (2) asphalt, (3) olefin. To the first group belong the oils of the Appalachian range and middle west. They are dark brown with a greenish tinge. Upon distillation they yield such a variety of light oils that their value is too great to permit of their general use as fuels.

To the second group belong the oils from Texas and California. These vary from reddish brown to jet black, and are used mostly for fuel.

The third group comprises oils from Russia, which are also used more extensively for fuel than for any other purpose.

Crude petroleum as it comes from the well is a mixture of many hydrocarbons and varies a great deal both in its chemical and physical properties according to its locality. Crude petroleum is subjected to fractional distillation before use, and only the heavier portions are used for fuel. Some of the western oils, the heavier ones, and some other oils, such as Borneo oil, can be burned in the crude state, but the greater part have to be refined. The crude oil contains sediment and other impurities, such as sulphur, which clog the burners, corrode them, and reduce the efficiency of the oil as a fuel. The lighter volatiles of crude oil are highly inflammable and distill over at a low temperature, which makes the crude product dangerous.

Refining Processes.

The crude oil is distilled in iron retorts heated by a fire, oil burners usually being employed. The retort is simply a large tank, shaped like a boiler drum, with furnace underneath. It is fitted with oil-supply and vapor pipes with necessary valves, and also safety valves set at about 5 pounds. The products of distillation are passed through condensers which consist of straight lengths of pipe connected by return bends and contained in a large vessel of water. The distillate is turned into separate vessels as the temperature rises, so that four distinct distillates are usually obtained, light and heavy naphthas and light and heavy oils, the division between the four varying in different refineries. Pennsylvania petroleum would yield: Naphtha 8 per cent to 20 per cent, oils 76 per cent to 78 per cent, residue 5 per cent to 9 per cent, and loss about 5 per cent. The residue is used for fuel oil. A Pennsylvania and Rusisan oil would yield about the following:

Pennsylvania.—Gasoline, 1.5 per cent; petroleum spirit: C. naphtha, 10.0 per cent; B. naphtha, 2.5 per cent; A. naphtha, 2.5 per cent; lamp oil, 54.0 per cent; lubricating oil, 17.5 per cent; paraffin solid, 2.0 per cent; residue, 6.0 per cent; loss, 10.0 per cent.

Russian.—Petroleum spirit, 6.0 per cent; lamp oil, 20.0 per cent; solar oil, 6.0 per cent; astatki (liquid fuel), 58.0 per cent.

The percentage of fuel oil obtained from the crude in our western fields is from 40 to 60 per cent.

Various Oils Compared.

The elements found in the different oils are in about the following proportions:

Pennsylvania crude.—Carbon, 84.9 per cent; hydrogen, 13.7 per cent; oxygen, 1.4 per cent.

Caucasian light crude.—Carbon, 86.2 per cent; hydrogen, 13.7 per cent; oxygen, .1 per cent.

Caucasian heavy crude.—Carbon, 86.6 per cent; hydrogen, 12.3 per cent; oxygen, 1.1 per cent.

Petroleum refuse (Russian).—Carbon, 87.1 per cent; hydrogen, 11.7 per cent; oxygen, 1.2 per cent.

In the better grades of our western oils, treated at the wells before shipment, in which moisture has largely been eliminated, it can be roughly assumed that 3 per cent of the oil is made up of sulphur, nitrogen, oxygen and water. This relationship is not universal, certain southern California oils containing large percentages of sulphur.

The predominating oil used on the Pacific coast, known as Bakersfield oil, averages about 16 degrees Baume. This makes a 42-gallon barrel weigh about 336 pounds. The ultimate analysis of this oil is: Carbon, 85.0 per cent; hydrogen, 13.0 per cent; sulphur, .8 per cent; nitrogen, .2 per cent; oxygen, 1.0 per cent; water, 1.0 per cent.

A number of lighter oils in general use ranging in the neighborhood of 18 to 20 degrees Baume would average about as follows: Carbon, 84.0 per cent; hydrogen, 13.0 per cent; sulphur, .8 per cent; nitrogen, .2 per cent; oxygen, 1.0 per cent; water, 1.0 per cent.

Certain heavier oils ranging from 12 to 14 degrees Baume give: Carbon, 86.0 per cent; hydrogen, 11.0 per cent; sulphur, .8 per cent; nitrogen, .2 per cent; oxygen, 1.0 per cent; water, 1.0 per cent.

An analysis of Texas oil (Beaumont crude), used by the navy fuel board, gave:

Before distillation.—Carbon, 84.6 per cent; hydrogen, 10.9 per cent; sulphur, 1.63 per cent; oxygen, 2.87 per cent.

After distillation, atmospheric pressure to 680 degrees F.—Carbon, 83.26 per cent; hydrogen, 12.41 per cent; sulphur, .50 per cent; oxygen, 3.83 per cent.

The amount of sulphur in this oil varies from 2 to 3 per cent.

In Texas oil refineries the crude oil is forced through tubes of a condenser-like apparatus, the hot residue from each still flowing around the tubes. This residue may be fuel oil or asphalt. The crude now goes into the first of a series of about eight stills, and then in succession to the other stills, finally being drawn out around the tubes of receptacle first mentioned, thus serving to heat up the crude going in, and is in turn cooled by it. The temperature of each still is higher than the one preceding it, and each still is connected to a vertical condenser, where products formed at different temperatures are obtained. Oil burners are used to heat the stills.

The Supply of Oil.

In 1910 the increased production in the United States came to between 200,000,000 and 204,000,000 barrels, which was more than the whole world produced seven years ago, and represents two-thirds of the world's supply today. California, owing to the remarkable developments during the year in the Sunset Midway district, leads, with 73,000,000 barrels; the Mid-Continent and Rocky Mountain fields follow, with 53,000,000, while Illinois and the Appalachian and Lima-Indiana fields follow with 32,000,000 each, and the Gulf and Caddo fields furnish 14,000,000.

Oil depots are now established at the following places: London, Liverpool, Hamburg, Antwerp, Rouen, St. Louis (France), Enna, Constanza, Noworowik (Batum), Alexandria, Suez, Sorenbar, Mombasa, Colombo, Madras, Calcutta, Rangoon, Penang, Batavia, Surabaya, Singapore, Bangkok, Saigon, Hongkong, Swatow, Foochow, Amoy, Hangkow, Shangkai, Yokohama, Kobe, Nagasaki, Sidney, Melborne, Adelaide.

Calorific Value.—A good sample of fuel on analysis gives C = 87.80 per cent; H = 10.78 per cent; and O = 1.24 per cent, which gives E = 19.9 pounds of water evaporated per pound of fuel. Taking 965.8 B. T. U.'s as the heat required to convert one pound of water at a temperature of 212 degrees F. into steam at the same temperature, there are 965.8 × 19.9 = 19,219 B. T. U.'s in a pound of fuel. If average steaming coal evaporates about 14.66 pounds of water per pound of coal theoretically, the theoretical value of oil would be 1.36 times that of coal.

A paper published by A. C. Sherman and A. H. Kropff in the Journal of the American Chemical Society, in October, 1908, gives the calorific values of a number of representative American petroleum oils, and also calculated values by using the following formula: B. T. U. = 18,650 + 40 (Baume −10).

Their object was to point out an approximate relationship between the density and the calorific power. Some of the results are tabulated.

	B. T. U. per pound.	B. T. U. calculated by above formula.
Pennsylvania fuel oil	19,656	19,526
Kansas crude	19,389	19,578
Texas crude	19,242	19,332
Indian Territory	19,418	19,342
California crude	18,799	19,150
California refined	19,555	19,530

A summary of these tests shows that sixty-four samples of petroleum oils, ranging from heavy crude to gasoline, and representing the products of the principal oil fields of the United States, were examined for calorific power by combustion in oxygen in the Atwater-Mahler bomb calorimeter with results ranging from 18,572 to 21,120 British thermal units per pound.

In general the decrease in calorific power with increase in gravity was fairly regular, so that the relation between the two may be expressed approximately by means of a simple formula. When the calorific power calculated from the densities by means of this formula was compared with those determined by experiment, it was found that in one-ninth of the cases the difference was greater, and in eight-ninths it was less than 1 per cent; in only one-thirtieth was it greater than 2 per cent; in no case was it as great as 3 per cent.

While it is obviously improbable that an exact quantitative relation should exist, it is believed that from the data the calorific power of commercially-pure petroleum oils may be predicted from the density, with a sufficient approach to accuracy for practical purposes.

Miscellaneous Tests.

Besides examining the oil to see that it is not cloudy in appearance from the presence of glue or suspended matter of any kind, the usual tests are for specific gravity, flash point, firing point, viscosity, calorimetry, sediment, water and, sometimes, sulphur.

Specific gravity is determined by means of Baume hydrometer. A hydrometer jar is about four-fifths filled with the oil, and the depth read off to which the instrument sinks in the oil. This may be effected by placing a strip of white paper back of the jar and noting the point at which the lower meniscus of the oil touches the scale. The temperature of the oil is taken at the same time, and, in case it is not 60 degrees F. (15.5 degrees C.), for every increase of 10 degrees F. (5.5 degrees C.) subtract 1 degree Baume from the reading of the hydrometer. The approximate specific gravity may be found by the formula 140 ÷ (140 + d), d representing the reading Baume at 15.5 degrees C.

Oil low in gravity requires an excess of steam for preheating in the auxiliary suction tanks, both for the preliminary treatment of the oil in an attempt to remove the excess of moisture and silt by warming, and also to enable the oil pressure pump to lift this oil under suction without danger of interruption in the pumping of oil to the burners. Also the heavier the oil the greater the amount of heating necessary in the pressure heaters between pumps and burners, where heat is added to facilitate atomization of the oil to economize in the amount of steam necessary for such atomization.

For navy use the oil must have a gravity Baume not greater than 30 degrees at 60 degrees F.

Flash Tests.—The flash point is the temperature

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to which an oil must be heated to give off vapors which, when mixed with air, produce an explosive mixture. The test may be conducted by placing oil in an open vessel, heating it, and then passing a light across the top until there is a flash. The appearance of a slight bluish flame shows that the flash point has been reached. This test is rather inaccurate, as any cause producing the rapid evolution of a large amount of petroleum vapor tends to lower the flash point. The faster the oil is heated the lower the flash point, as more vapor is driven out. The liquid evaporates faster from a large and shallow cup; best results are obtained from a deep cup about half filled. The nearer or larger the testing flame the lower the flash point. The point of application of the flame also affects the flash point, the point being too high when the flame is first applied at center of cup; the best point of application is at the edge, the mixture of air and vapor being more complete at this point. Draw the flame from edge diametrically across top of cup. A simple and better method is to use a beaker. Cover it with a disc of asbestos through which a thermometer passes to within a quarter of an inch from the bottom of the beaker. The beaker, etc., is now put in the sand bath, and surrounded with sand to the level of the liquid. A small flame is then applied under the bath, and the temperature allowed to rise about two degrees a minute. After each rise of one degree, the asbestos disc is turned to one side, and a small flame is quickly put into the vapor.

Closed or covered testers are much preferable to the above and are used for tests in the navy. In these instruments a metal cup of standard size is used for holding the oil, means being provided for obtaining correct quantity of fuel. This metal cup rests in an outer vessel which forms a water jacket, and which is heated by a lamp placed below. The oil cup is provided with a close-fitting cover which carries a test flame and thermometer. Holes are provided in the cover which can be closed or opened by a sliding piece of metal. When flame is placed below outer water packet the temperature rises slowly. At regular intervals the slide on the cover is pulled aside, test flame is lowered into the opening in the cover, and the moment a flash is seen to occur the temperature is noted, the point being regarded as the flash point.

If the flash point is comparatively high the fuel oil becomes thick and sluggish, can be burned with difficulty, and great power is required to atomize it before ignition at the furnace. The volatile elements which are not present with a high flash point are a good assistance to combustion within ordinary limits. The extra refining necessary to produce a high flash point also makes the fuel more expensive.

The British Admiralty and our Navy specify a flash point of not less than 200 degrees F. The merchant marine use oil with a flash point between 150 degrees F. and 160 degrees F. No trouble has been experienced in the safe storage and burning of oils with a flash point of 150 degrees F. and upwards.

Firing Point.—The firing point of an oil is the temperature at which it will give off vapor which when ignited will burn continuously. It is made by continuing to heat the oil (the cover being removed in the case of a closed tester without slipping out the thermometer) at the same rate after the flash test is made and noting the point as indicated above. The flame may be extinguished by a piece of asbestos board and the heating discontinued. The firing point is usually about 50 degrees F. above the flash point.

Viscocity Test.—The viscosity test determines the rate of flow of an oil through a specific orifice under a certain head. The Navy specification requires oil to flow freely in a continuous stream through a ½-inch circular hole under a two-foot head at a temperature of 40 degrees F.

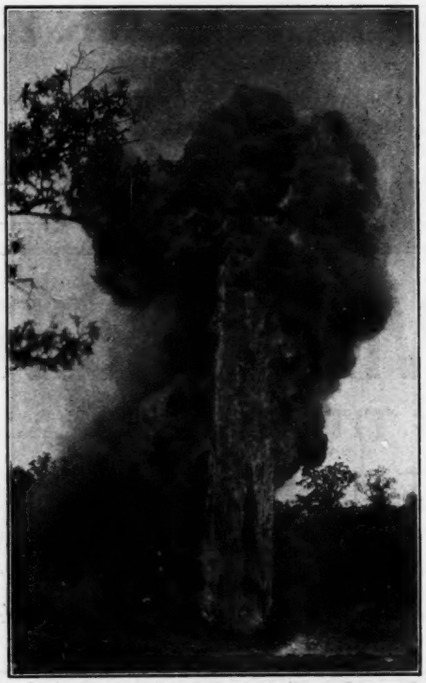
Heating Value.—The value is determined by using the bomb calorimeter. Oil for the Navy must have a value not under 144,000 B. T. U. per gallon. The bomb calorimeter is used to determine the B. T. U. per pound, from which the B. T. U. per gallon can be calculated by using 8,331 pounds of distilled water per gallon at 60 degrees F. and the specific gravity of the oil as determined by the Beaume test at the same temperature.

Sediment.—This is determined by placing 50 c.c. of oil and 50 c.c. of naphtha in a beaker, shaking them, and allowing them to stand for six hours. Percentage of sediment must not be over one per cent.

Water.—Water is determined as in test for sediment. By rubbing the oil together with a little eosin on a glass plate the oil will take on a pink color if water is present. Also with oils which flash below 240 degrees C. in the Pensky apparatus, the moisture test is conducted by determining the losses in weight suffered by two samples of about the same mass (10 to 15 grammes) of the original and the dehydrated oil, when all froth formation has ceased. The difference in the losses of weight of the two samples gives the percentage of water in the original oil. The oil is dehydrated before this heating by being shaken with calcium chloride in a flask and subsequent filtration through a dry filter.

Sulphur.—This may be determined by burning the oil and having the products of combustion sucked through wash bottles containing bromine water. The sulphuric acid is then determined with barium chloride. The odor of sulphur fumes is also noticeable when burning oil containing sulphur. Sulphur in oil should not exceed ¾ of one per cent by weight.

Storage.—Refined petroleum and fuel oil have very pronounced searching qualities, and its fumes have a great penetrating power, consequently the joint which is quite tight under water pressure may be subjected to leakage with this class of petroleum. As the heavier oil has a high flash point there is little danger of storing it, and very little trouble; a joint which is water tight is usually tight under the same head pressure of heavy oil. A lower flash point allows some of the more penetrating oils to remain in the fuel, and some trouble might be expected; but when the fuel is stored in the double-bottom compartments the lower temperature of the sea water which is in contact with a large part of the plating surface should prevent any excessive formation of vapor and gases, even from the lower flash-point fuels.



BURNING WELL IN OSAGE NATION.

The double bottoms are suitable for storage with little alteration, if tested to a sufficient head. Lloyds specify a head of at least 12 feet above the water line, or the highest point of the tank. They also specify open-topped ventilating pipes to each tank to discharge above the upper deck. Holes should be provided at the highest point of each subdivision of the double bottoms, so that the vapors can escape upwards from each, while the limber holes, provided for drainage, allow the fluid to gravitate towards the keel. The upper holes would generally be required in the longitudinal frames only, and they should not be large enough to allow any considerable ascending of the liquid when the ship is rolling. The petroleum vapors are heavy and tend to accumulate near the surface of the liquid, and, if the tank is empty, near the bottom of the tank. For the removal of this vapor, which may become dangerous under unfavorable conditions, pump suctions should be led to near both the top and bottom of the tank. Space must be allowed above the oil for its expansion when warmed by the ship or sea water outside it.

The open tops of the ventilating pipes should be protected from sparks or lighted matter falling into them.

Specifications for Oil—Storage Compartments.

Fuel Oil.—The rivets shall be spaced not more than three and one-half diameters apart in the same row, and no laps, seams or butts shall have less than double riveting. All stiffeners, angle irons, etc., on the outside of tanks shall be caulked, and laps, seams and butts shall be caulked on both sides where directed. All oiltight bounding angles shall have bosom pieces to take at least four rivets on each side of butt.

Special consideration shall be given to securing the most superior riveting, fitting, etc. Three-ply riveting shall be avoided whenever practicable. All holes shall be punched small and properly reamed, or, if directed, shall be drilled in place.

The above requirements apply to all fuel-oil tanks. In addition, those compartments specified to be fitted as storage tanks shall be provided with the necessary trunks, cofferdams, sheathing, sounding tubes, means for indicating the quantity of oil, air escapes, and all necessary valves, piping, etc., for pumping and storing oil fuel.

The compartments shall be fitted with warning signals to give distant, and, if directed, local warning when the oil in filling enters the trunk.

All outlets and inlets from the tank shall be through the top, without horizontal sections in the tank. Air-escape pipes shall be fitted to the tanks, cofferdams and expansion trunks; these in all cases to exceed the size of the filling pipes and to extend above the main deck. These pipes should have gooseneck heads and be fitted with wire mesh and closing valves.

All pipes, except ventilation, overflow and oil-escape pipes, shall extend to the bottom of the tanks, to prevent the accumulation of gas.

There shall be provided connections for steaming out the tanks, and salt-water connections for cleaning. Overflow pipe shall be fitted for use in cleaning out.

All valves shall be operated from the deck next above the speed-trial water line, or as directed.

To subdivide the area of fuel-oil surface light, non-water-tight covers shall be provided for the access and lightening holes in such non-water-tight longitudinal as may extend through the tanks. Special care shall be taken to thoroughly protect and insulate any electric wires in the vicinity of the installation and to prevent any sparking.

Surfaces exposed to the oil are to be covered with shellac or linseed oil, as directed, or other approved covering.

Lacquered leather or other approved material shall be used in the manhole covers and elsewhere, as directed.

In Admiralty practice with oil tanks for destroyers, great care is taken in construction, as, on account of the lightness of plating, no caulking can be done. The tanks are tested for water-tightness and are then filled with oil under a 24-foot head, and must show no leaks in a 72-hour test.

With oil piping great care is necessary to obtain good joints. In the best practice they are all machined. British practice seems to be to use copper piping and flanged joints.

Settling or Separation Tanks.—The presence of water, which is very common in small or large quantities in the oil fuel, increases the difficulty of obtaining efficient combustion and considerably reduces the evaporative power. Every 1 per cent of water contained in the fuel reduces the evaporative power 2 per cent. The presence of water is generally indicated by the color of the flame. With satisfactory combustion the flame is an opaque, dazzling white for about six inches from the end of the jet, then gradually becomes semi-transparent, then at mid-length becomes violet, and towards the end changes to red. When mixed with a moderate amount of water no violet is observed, and the red becomes darkened and fringed with smoke. If only a small proportion of water is present, instead of the dark red, the end of the flame is white, and this is probably due to acetylene.

The densities of the oil fuel (.9) and water (1) do not differ very much. The lighter oil does not readily rise to the surface, and it is necessary to accelerate the separation by heating or other means. To do this the fuel is pumped into settling tanks, each containing about 12 hours' supply. A coil of piping heated by exhaust steam may be made to float a few inches below the surface of the oil, and the heat set up a circulation

of the oil and water past it. As the oil and water have different expansions they separate more rapidly when heated. The separation by heating and circulation leaves the lighter oil at the surface while the heavier water gravitates to the bottom of the tank. A gage glass shows the relative levels of the oil and the water; the water is drawn off from the bottom of the tank.

When separating oil from water by heating it only sufficient temperature for the purpose should be allowed in the heating pipe or coil. Vapor is given off by the fuel at a temperature a little below the flash point, and any great amount of heating is dangerous.

Storage on Shore.

A 10,000-barrel steel storage tank for refined oil built by The Texas Oil Company, has the following specifications: Dimensions, 50 feet in diameter, 30 feet high; built of soft open-hearth tank steel; bottom plates, ¼ inch in thickness; first ring of shell 5-16 inch in thickness; first ring of shell joined to bottom of tank with 3-inch by 3-inch by ⅜-inch angle bars; second ring of shell 5-16 inch in thickness; third, fourth, fifth and sixth rings, No. 6 U. S. gage; roof built of No. 10 U. S. gage steel sheets resting on an angle bar at the top of the sixth ring.

The rafters are supported at the center upon a circular rest plate, and an iron pipe column, 8-inch diameter, and at the sides with ¼-inch flanged gusset plates riveted to the sixth ring. The entire tank and roof caulked to be oil and gas tight.

These tanks are generally fitted with one manhole through roof of tank, and ladder leading down therefrom. One 6-inch swing pipe for loading or discharging. This swing pipe may be raised or lowered by means of windlass and cable, all of which is operated from gas-tight hatch in roof of tank. The object of swing pipe is to enable it to discharge from any depth beneath the top of the tank. It is desirable to discharge tank with swing pipe just below the surface of the oil, since water and moisture carried in suspension in the oil will settle at the bottom. Oil pumped from near the surface will be free from same. There is also a 2-inch swing pipe used for drawing off this water from the bottom of the tank. In crude-oil tanks a steam coil is sometimes used to precipitate more rapidly this water or moisture.

Tanks are provided with "free steam" pipes leading to the top of the tank. In case of fire in the vicinity, steam is allowed to enter and fill the tank above the surface of the oil, thereby smothering any tendency of the gases to ignite. These steam pipes are generally 2-inch pipe having "goose neck" for expansion at the top, as shown. Tanks are provided with one or more explosion hatches, located on the roof. Earthen fire banks are built around the tanks; their relative location and height is so designed to form a reservoir of cubic contents equal to that of the tank. This is a fire protection to adjacent equipment.

The Standard Oil Company's extinguishing system at Bayonne, New Jersey, consists of tow tanks from which pipes lead to small mixer chamber and from there lead to surface of the oil that is burning.

The contents of the tanks are as follows: First tank, blue, glucose, bicarbonate of soda, salicylic acid and water; second tank, aluminum sulphate, sulphuric acid and water.

The idea being that the giving of large quantities of CO_2 would smother the flames, which are kept in contact with the surface of the burning oil by the suds formed with the glucose.

This combination effectually extinguishes a fire, but it requires large quantities of it, which practically excludes it from use on board ship.

Pyrene Extinguisher.—This has for its base carbon tetra chloride (CCl_4), which is a heavy liquid that evolves large quantities of non-combustion supporting gas when heated to about 200 degrees F., the liquid being sprayed on the flames.

Advantages of Liquid Fuel for Marine Use.

1. Reduction of Weight and Space.—Fuel oil has a greater evaporative efficiency than coal in the ratio of about 14 to 9. Also while a ton of coal occupies about 43 cubic feet, a ton of oil occupies about 39 cubic feet. For the same amount of fuel the bunker space could be reduced to about five-eighths that required for coal, or, using the same space now given for coal, the steaming radius could be increased from fifty to one hundred per cent.

2. Reduction in the Fireroom Force.—A battleship now having a complement of about 220 firemen and coal passers could have it reduced to 50 firemen and coal passers, which would be more

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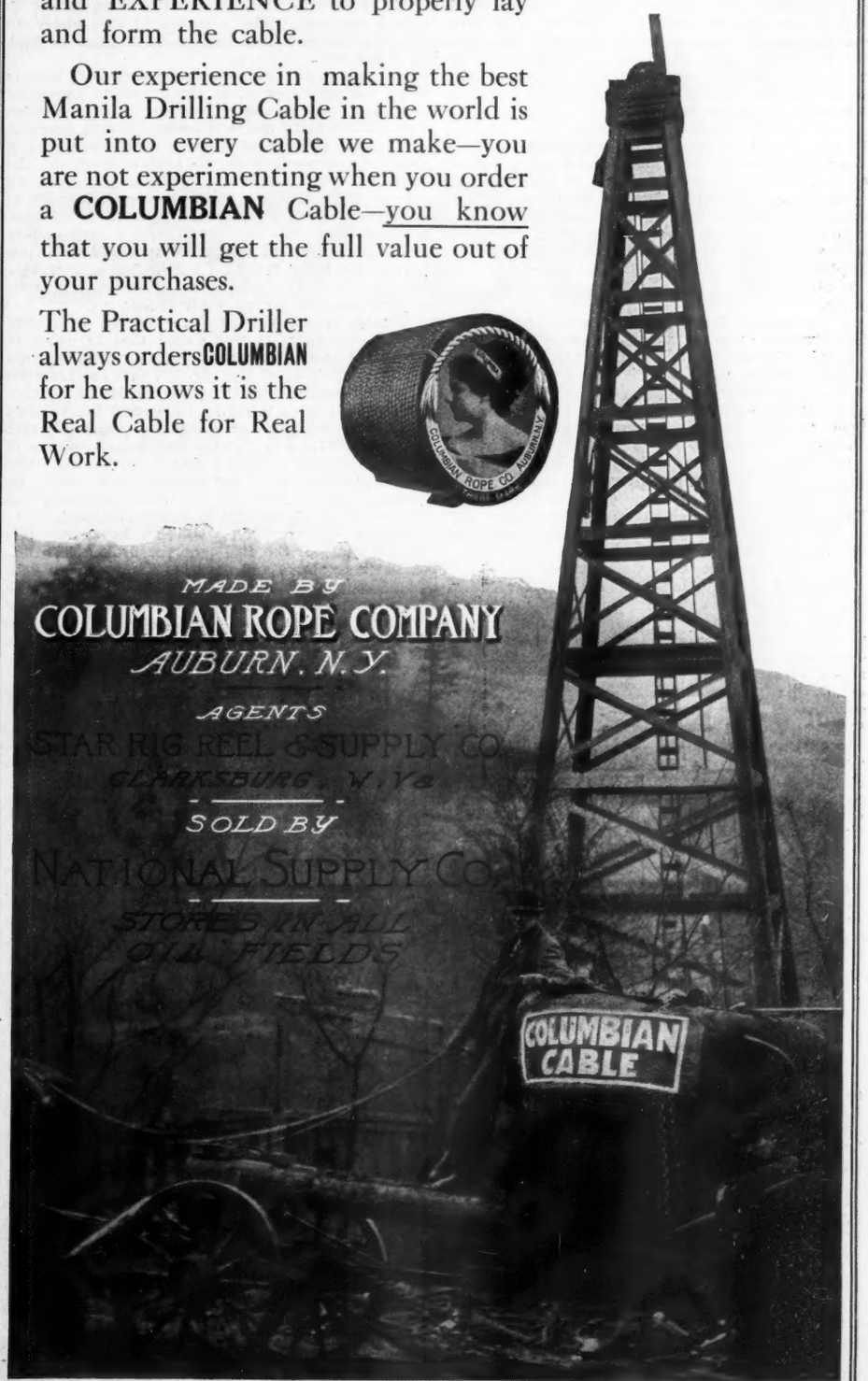

than enough for operating and cleaning purposes. The saving in pay and subsistence would be a considerable item, and the space now taken up for washrooms, lockers, etc., would be available for the remainder of the crew, greatly adding to their comfort, or could be utilized for stores. The saving of fresh water would be considerable, and, from a point of discipline, a reduction in the fireroom force of almost any ship would be an attractive feature.

3. Elimination of Ashes and Dirty Fires.—No coal and ash-handling gear with the resulting dirt.

4. The Rapidity and Cheapness with which it can be Brought on Board.—An example of this is given on the Delaware where oil has been taken on board through a single hose at the rate of 100,000 gallons (about 338 tons) per hour. Where an entire ship's company is required to coal ship and at least one day is taken to do it, with an extra day to clean up, oil could be put on board our largest ship in six hours at least, and not more than ten or twelve men would be required to do the work, and no dirt would result. It would also afford an easy means of getting fuel on board at sea while ships are underway.

5. The More Perfect Combustion of Liquid Fuel Prevents the Formation of Residuals and Smoke.—A steady pressure can be kept with much greater ease, as furnace doors do not have to be continually opened, with consequent inrush of cold air. There is much eisier control of fires, permitting variation in power. The boiler tubes being free from soot and practically always clean are in the best condition for transmitting heat. There is also but little waste of fuel on starting up or shutting down.

6. Portions of Ship which are now Unsuitable for Coal-Bunker Purposes through Inaccessibility are Available for the Storage of Oil Fuel.—The double bottoms can be used and the trim of the ship can be easily preserved. There need be no such thing as a list to port or starboard through being obliged to use coal out of one bunker more than another. A steam pump will readily remove oil from port to starboard or vice versa, when the same expedient is impossible with coal.

7. We are in a Better Condition to Use Oil Fuel than any other Nation, since the greater part of the world's production of petroleum comes from the United States.

Conditions for Combustion.

For complete combustion of oil fuel the following conditions are necessary: (1) the gases must be kept at the ignition temperature long enough to insure their burning; (2) there must be a sufficient supply of air; (3) the air must be intimately mixed with the fuel. The first condition is fulfilled by having proper furnace arrangements—ample combustion space, and suitable refractory linings. During the early stages of combustion of any fuel the gases of a highly volatile nature distil at a low temperature, rise rapidly, hug the boiler, enter the tubes or flues and pass out unconsumed. The combustion chamber should therefore be arranged with fire brick so that the flames may be retarded, diffused and distributed, and the velocity impeded. In burning liquid fuel the oil is practically converted into gas, vapor and floating particles of finely-divided carbon before combustion begins, or, at any rate, before any large amount has been consumed. The first effect of the heat is to dissociate the carbon from the hydrogen. The carbon being left alone is carried along in a current of gases, and, unless it has sufficient time to take up its amount of oxygen for combustion, it is going to be left as soot, or carried along with the excess of oxygen with which it should have been united before being cooled below the temperature of ignition, and forms smoke. Soot once formed is almost impossible to burn, and the aim is to prevent its forming rather than to try to burn it once it has formed. Suitable refractory linings in the furnace also help to keep the temperature high, and the length of flame from a burning hydrocarbon is largely determined by the intensity of combustion A well-mixed gas burning at a high temperature will produce a short flame, whereas the same gas burned in water-cooled flues at a much lower temperature will produce an exceedingly long flame. The impact of the flame on a cold surface, such as a boiler plate or a water tube, with a temperature of about 400 degrees F., checks combustion and also produces smoke, as there is soot deposited. Experiments show that ample combustion space and suitable linings, by giving time for diffusion and keeping the temperature high, diminish the volume of the flames.

In an oil-burning plant, since the admission of air is under complete control and the fuel is burned in fine particles in close contact with the oxygen of the air, only a small excess of air above that actually necessary for the complete combustion of fuel is required. Calculations as to boiler performance are simplified with oil fuel, as practically complete combustion is secured in a well-designed furnace, the carbon and carbon monoxide usually being burned to CO_2. It is possible to obtain a fair notion of the excess air from a mere determination of the amount of CO_2; that is, assuming all hydrogen having been burned to H_2O and all carbon to CO_2. Any simple formula involving the element CO_2 must be dependent on an assumed percentage of hydrogen in the oil fuel; but inasmuch as the hydrogen contained is fairly uniform for any given grade of oil, there is but little error in such an assumption.

Under the present systems of firing the amount of CO_2 present in the flue gases is often as low as 4 to 5 per cent. The presence of CO_2 under an ideal and uniform load can be maintained as high as 13 per cent.

The various text books give from 15 to 16 pounds of air per pound of oil as the minimum necessary to supply the necessary oxygen for combustion with from 5 to 10 per cent excess in best practice, while some claim that from 50 to 100 per cent is necessary, depending on the system used and the condition of the furnace in which it is burned. An excess of air causes a loss not only on account of the direct loss in heating the added air to the temperature of the flue gases, but there is a secondary loss due to the fact that, corresponding to an excess of air, there results a higher flue temperature not only for the actual amount of air necessary for combustion, but for all such excess air.

Method of Introducing Air.—On the trial trips of the destroyers it was found that in order to burn oil properly there must not only be a constant relative supply of oil and air, but that the air must enter the furnace with the oil at a relative velocity. Experiments were made by increasing the velocity of the air without increasing its volume, which proved that for any furnace the proper volume of air can have its velocity changed so that all vibration ceases and quiet combustion takes place. Increasing the velocity of air also decreases the amount of oil that might otherwise be used.

Method of Introducing Oil—To intimately mix the oil and fuel the fuel must be broken into fine particles or atoms and each atom surrounded with a sufficient amount of air. The object of breaking up the fuel is to increase the surface area by minutely dividing it into a spray of the greatest number of particles of the smallest size, and then to allow the air required for combustion to become intimately mixed with the fuel. The finer the division is, approaching very closely to the consistency of a fog when using a good atomizer, the greater the surface area becomes, and the more intimate is the mixture with the air supplied for combustion. This may be accomplished by gasifying or atomizing. Gasifying where the fuel is heated and converted into vapor before going to the furnace has not been found satisfactory, and atomizing is recognized as the best method of burning.

Systems of Atomizing Oil—The necessary impelling force for atomizing is generally supplied by—

(1) Delivering the oil under pressure, as in the mechanical-spray type. This is the type used in the Navy, and the oil is delivered in conical form, a whirling motion being imparted to it. The air comes in around the burner in an enveloping cone. In some cases the cone is given a whirling motion opposite to that given the oil. The merit of this feature is in dispute. In mechanical atomization systems it is necessary to put the firerooms under air pressure in order to force the air into the furnace along with the oil and have it present in a mechanical mixture such as will burn readily. This makes it necessary to run under forced draft under all conditions, which is decidedly objectionable in port. Pressures used in mechanical burners vary from 100 to 200 pounds.

(2) Inducing a flow by a jet of steam which is frequently superheated.—This system is almost generally used on shore, but very little for marine purposes. The objection to its use is the amount of water used for atomization, most authorities giving from 2 to 3 per cent of the total amount evaporated, while the Navy Fuel Board estimated it as high as 4½ per cent. The burners are designated as outside or inside burners, according as the steam surrounds or is surrounded by oil before leaving the burner. It has the advantage of heating the oil, but water contained frequently extinguishes the burner.

(3) Inducing a flow by a jet of compressed air which is frequently heated.—This system is employed to a great extent in the merchant marine, and is very efficient. When the air is heated a shorter flame is usually obtained than when using steam or mechanical means, and nearly any kind of oil can be used. It has the disadvantage of cost of compressors, their upkeep, noise and extra weight.

Heating the Oil.—In all systems the oil that is to be immediately burned is first heated. Heat deprives the oil of its viscidity, and has the further advantage that any water in the oil more readily separates out of hot oil than cold oil, first, because the heated oil, being more limpid, offers less resistance to the freeing of water, and, second, there is a greater expansion of oil than of water due to the heat, and the water gains a relatively greater specific gravity. The oil should not be heated above the temperature best suited for most efficient combustion.

Complete Combustion.—The guides to complete combustion are: (1) an analysis of the smoke-pipe gases; (2) the amount of smoke given out by the stack; (3) the appearance of the flame itself.

By analyzing the smoke-pipe gases and obtaining the percentage of CO_2, a positive guide is at once obtained as regards combustion. The percentage of CO_2 with careful adjustments can be kept as high as 13 per cent.

The amount of smoke given out is a good guide, but not a positive one, as absence of smoke does not indicate complete combustion. To readily observe the amount of smoke from the fireroom an electric light may be placed in the boiler in the back portion just below the uptakes. A round deadlight is opposite in the front end of the boiler, and reflecting mirrors enable the attendants in the fireroom to see into the space back of the deadlight. Any smoke hides the lamp or dims it.

Probably the best method is to observe the flame itself. Peep holes are provided in the furnace so that the interior can be seen. With good combustion the gases become clear, clean, brightly incandescent, red, and the opposite end of the furnace shows up clearly. So long as there is smoke formation the opposite brickwork cannot be seen. As soon as combustion is perfect it appears clear and bright red, and the air should then be gradually cut down in quantity until an occasional streak of dark colored gas begins to show, thus proving that under the conditions of the furnace the air has then been reduced to a possible minimum.

If looked into through a piece of violet-colored glass the interior of the combustion chamber with its brick linings should show a light lavender color, indicative of perfect combustion, with the production of actinic rays, indicative of high chemical action. A chilled fire, such as is produced where a boiler is placed close upon the furnace of a coal fire, will show very little light through a violet glass, its flames being cut down from several feet in length to a few inches only in many instances, the flames of yellow and reddish intensity being resolved into streams of dim colored gas which throw off no light of sufficient actinic power to penetrate the glass.

Oil as Auxiliary to Coal.—The use of solid and liquid fuel in the same furnace together modifies the condition for each fuel.

For coal the efficiency of combustion should be better, and for oil the heat should be better utilized.

Combustion on the grate may be imperfect, but the oil atomizer so mixes up the gases from the grate with the air admitted through and above it that combustion should be much improved and the excess of air would be used by the oil.

This would be true where furnaces are arranged so that a sufficient amount of air could be obtained to burn each fuel, but with furnaces arranged to give the best results with coal alone, using oil as an auxiliary only in special cases, the condition will not allow of sufficient air supply to properly consume the oil and develop its full advantage, while a dense flame of oil burning above the coal will keep the air away from it and deaden the surface combustion.

Experiments on the Delaware proved that it is difficult to burn the oil because sufficient air did not get to it, the amount being limited to the amount of air that gets in alongside the burner and through the furnace doors, which must be left open to accomplish anything. It resulted generally in a great deal of smoke and uneconomical performance.—Journal of the American Society of Naval Engineers.

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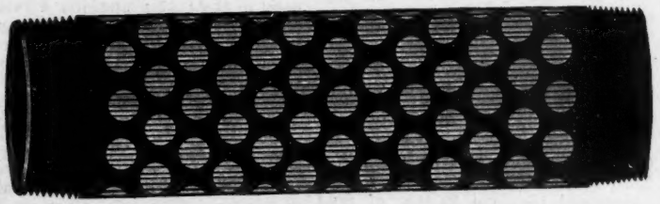

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WEEKLY RECORD OF OIL FIELD OPERATIONS

OKLAHOMA.

Summary of August Operations.

	Comp.	Prod.	Gas	Dry	Rgs.	Drg.	Ttl.
Ch'kee D. S.	102	2,835	12	6	57	20	77
Ch'kee S. S.	85	1,711	4	11	41	..	41
Osage	30	1,200	..	5	34	31	65
Pawnee ...	15	2,500	1	2	24	10	34
Creek	40	1,875	5	9	47	24	71
Miscel.	2	....	..	2	16	..	16
Total ...	274	10,121	22	35	219	85	304
July Ttls.	313	16,285	41	44	236	89	335
Difference	39	6,164	19	9	17	4	21

Decrease completed wells, 39.
Decrease new production, 6,164 bbls.
Decrease gas wells, 19.
Decrease dry holes, 9.
Decrease drilling wells, 17.
Decrease rigs, 4.
Net decrease, 21.

Oklahoma shows a decrease of 39 wells drilled and a decline in new production of 6,164 bbls. over the month of July. This was caused by a general falling off of field work during the month, the decline of the Osage Junction pool, and no other opening of new territory during the month. In the Osage Junction pool, where a month ago, there were fifteen strings of tools running, now only six have work and it looks as though the next few weeks would mean a still further decline, although the Finance Oil Company and Douglas Franchot got a nice showing in a well in section 2-21-9, but this is far away into the Osage country and the production is not large enough to warrent a pipe line at present. The Cherokee deep sand district, including Dewey, Bartlesville, Bird Creek, Hogshooter, Copan and Ochelata holds the first place in the number of completions. There were 102 completions, 12 were gassers, 6 were dry and there was a net initial production of 2,835 bbls. The shallow side of the Cherokee nation was next with 84 completions, 1,711 bbls. new production, 4 gassers and 11 dry holes. There are now 41 wells drilling in that side of the Cherokee against 57 in the deep sand side with 20 rigs ready for work. There is a large decrease in production in the Osage nation, caused by the decline in the Osage Junction pool. During the month, all the wells completed were small. The new production for August amounted to only 1,200 bbls. while last month it was 6,630 bbls. with 41 completions against 30 completions for August. Pawnee county shows an increase of one completion and an increase of 20 bbls. production. There were 40 completions in the south end of the field, with 1,875 bbls. new production, 5 gassers, 9 failures, 47 drilling wells and 24 rigs. There were two completions in the undeveloped parts of the field. The month of September will probably show an increase in work and operators are hoping for better conditions within the next thirty days.

KANSAS.

Summary of August Operations.

	Comp.	Prod.	Gas	Dry	Rgs.	Drg.	Ttl.
Allen	1	15	..	..	2	1	3
Neosho ...	3	5	..	2	3	..	5
Wilson ...	5	15	4	..	7	1	8
Chautauqua	3	70	..	..	5	..	5
Montgom'ry	11	160	4	..	8	..	8
Total ...	22	255	8	2	25	2	27
July Ttls.	41	295	10	9	19	3	22
Difference	19	40	2	7	6	1	5

Decrease completed wells, 19.
Decrease new production, 40 bbls.
Decrease dry holes, 7.
Decrease gas wells, 2.
Increase drilling wells, 6.
Decrease rigs, 1.
Net increase, 5.

The Kansas situation remains about the same as the month of July, with 19 fewer completions, but 295 bbls. new production against 255 bbls. of the month before. Of the completed wells, 8 were gassers and 2 were dry. There are now 25 wells drilling and 2 rigs in the Kansas end of the field. Montgomery county had the most completions with 11 to its credit, 4 being gassers and the rest producers with 160 bbls. initial production.

CONDITIONS NOT IMPROVED.

TULSA, Okla., Sept. 6.—Several portions of the Oklahoma field are attracting unusual attention at this time, but on the whole there is very little to warrant the producer in feeling better than he has at any previous day during the summer. The majority of the producers are sticking to the old districts.

The most interesting developments are in the extreme north end of the field, near Lenapah and near the Kansas line, where the Ramsey Oil Company, Owen & Connelly of Caney, is active; in the Hogshooter extension, known as the Squirrel pool, east of Bartlesville, six miles; in Pawnee county and the Osage. The Osage has had several good wells this week and the well of the Finance Oil Company, and Douglas Franchot, in section 2-21-9 has caused some unusual excitement. The lower end of the field has developed nothing out of the ordinary and, taken all in all, it has been by far the quietest summer in the Oklahoma field.

A Small Deal.

A minor deal was consummated the first of this week when the Higgins Oil Company through its representative, Charles Wilson, bought from James Ward, the Grove Oil Company, the Williard Oil Company and the Missouri Mining Company, 380 acres situated in sections 25, 35 and 36-25-13 and in section 1-24-13, in the Ochelata shallow sand district Those interested in the selling companies are J. C. Starr, Guy Patton W. E. Ross, of Vinita, and A. F. Ault, of Tulsa. The properties included in the deal are among the best in that part of the field, the wells averaging from 25 to 30 bbls. The purchasing company intends putting several machines at work immediately and will develop the leases.

Pawnee County.

Pawnee county holds the center of the stage when it comes to activity. There are several companies whose production brings them in a check each month that runs into five fig ures. That is not half bad when the amount of acreage is taken into consideration. The Pawnee county field is one of the most interesting in Oklahoma and the staying qualities of the field is one of the best features. Just now the Gypsy Oil Company, John Markham, the Minnehoma Oil Company, the Producers Oil Company, the Pavoa Oil Company, Nelson & Grieves, the S. R. K. Company, the Prairie Oil and Gas Company, and the Millikin Oil Company are all operating and getting some good production. The Gypsy Oil Company has No. 8 on the Widener land, section 34-21-8, about completed, at the top of the sand. No. 16 is drilling at about 1,500 feet and No. 11 is about 1,000 feet deep. The rig is up for No. 7. Heretofore the Gypsy Oil Company has been unfortunate in Pawnee county, but the Widener farm is one of the best looking pieces in the entire field, producing now about 1,600 barrels daily. It offsets John Markham's splendid property on the Findley farm in the section east, 35-21-8. Markham is still drilling on his No. 3 on the Findley, and has a fishing job, with the tools in the hole at 2,300 feet. To the north, the Producers Oil Company has entered the game and has two wells drilling with a rig up for the third in section 35-21-8, on the Jones land. No. 1 is just nicely started and No. 2 is drilling at about 400 feet. It has made a location for No. 4. The Producers Oil Company also has a rig up on the Nielsen farm, section 27-21-8 northwest of production and expects to drill within the next few weeks. The Minnehoma Oil Company's No. 4, offsetting the Markham property on the south, is about due. It should be completed Thursday. The company has a rig up for No. 5 and it will be drilled as soon as No. 4 is completed. To the south, Nelson & Grieves, on the Layton land, section 2-20-8, have two wells nearly completed which should be in the latter part of the week. No. 7 is drilling at 1,800 feet and No. 8 is about 800 feet deep. Both wells are in the old division of the pool and will not extend the producing area. Among the luckiest of the companies in the Pawnee county field is the Paova Oil Company, an Oil Well Supply Company subsidiary. It got in on the ground floor and now has one of the best leases in the county. Its No. 10 one the Stockton Purcell is in and will make 200 bbls. a day. The S. R. K. Company on the Arnold in the same section, is drilling No. 10 at about 1,600 feet and No. 11 is about 800 feet deep. The Millikin Oil Company has two outfits at work, one on the Gibbons land, No. 3 which is about due, and No. 6 on the Bretenall just started. The same company expects to start its test on the Hardy land, section 12-20-7 this week. The rig has been built for the Chase & Brown well to be drilled in the east half of the northeast quarter of section 19-20-8, just a little north of the town of Teriton. Operators are confident that there will be some oil in that vicinity and all indications point toward a development there. Another location has been made that will be important in the development of Pawnee county, on the northeast corner of the northeast quarter of section 16-20-8, by Kemp & Jennings. They have already started the rig and should start work on the well the latter part of this week.

Two important wildcats in the field, are recorded this week as failures, although the companies have not yet abandoned them. The Prairie Oil and Gas Company is shut down at 2,745 feet in the test at Blackburn, and has not yet decided whether to drill deeper or not. There has been no sign of a sand. It has been an important test for that part of the field and if it had developed anything good, would have opened a wide scope of country. It is already ten feet in the Mississippi lime. The other test was south of the Pawnee county field in the Creek nation, on the Mildred Atkins land, section 8-18-9, the property of the Producers Oil Company. It is still drilling at 2,325 feet, but is dry so far. It is understood they got 30 feet of sand with about enough gas to fire a boiler, but no oil. Shaffer & Smathers are only about 800 feet in their test to the west of the Producers well, in section 17-18-8, drilling being slow on account of an underreaming job. The Shaffer & Smathers well is on the Wilson land and should it develop into a producer would open up considerable acreage.

Slick & Jones have made a location in the northeast corner of the northwest quarter of section 28-18-7, twelve miles due south of Jennings. They have a large acreage under lease and will begin drilling at once.

The Osage Pool.

The best news of the week is the showing of oil in the Finance test in section 2-21-9, five miles northeast of the Osage pool and in the center of the section. The well may not be the biggest producer in the field, but it has a good showing. The sand was found at 2,140 feet and after drilling in about 70 feet the hole filled up over half. That is a good indication that oil may be found in that direction and looks as if the trend is in the direction of the "lot" stuff in the Osage country. That is just what the Finance Oil Company and Douglas Franchot are trying to find out the connection between the old and the new field. To that purpose the Finance has a well started on lot 311, miles away from production. They have been shut down for several days waiting for water, but expect to start up again in a short time. The well in section 2-21-9 looks very much like an edge well and might be the beginning of another Osage Junction pool, or perhaps a replica of section 19-21-9, Finance Oil Company, which has been one of the richest in the field and one that has held its own fairly well, along with the rest of the production. The Riggs Oil Company is drilling at 1,800 feet in its test in section 33-22-8 in the Osage, north of Cleveland. The Uncle Sam Oil Company has started two tests in 23-22-9, south of Nelagony and will finish one of them the first part of next week. Several wells have been drilled in the vicinity of the Uncle Sam wells. With perseverance and money, perhaps someone will find the lucky spot. That is one of the uncertain things about Oklahoma.

In the old part of the Osage, the Indian Territory Illuminating Company got another nice producer in No. 4 on lot 293. This has proved a valuable property to the Illuminating Company. The well is making 1,500 bbls., four days after being completed. Offsetting this the Central Fuel Oil Company, under the name of the Waukesha Oil Company, has a nice producer on lot 182, to the east. This well started off at 100 bbls. an hour and is holding up in good shape. This is the first completion for the Central Fuel Company in the past few months and the first attempt will be followed by more activity in all parts of the field. They probably hold as much in leases as any company in the entire field and with their assuming active work in developing, it would mean much to the men employed in the old fields.

North End Development.

The Ramsey Oil Company. Connelly & Owen, of Caney, Kan., have been attracting much attention during the past few weeks with a small development southwest of Caney, Kan., about five miles. The wells start off good in the Peru sand and are holding up satisfactorily. They drilled a well on the Buffington in section 36-29-13 first and it made 100 bbls. the first twenty-four hours. It is now making about 75 bbls. a day. They drilled a second well good for 60 bbls. and now have

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two others about due. The Quaker Oil Company has a well started in that vicinity, and it may develop into a larger pool than at first thought. Another interesting development in the north end of the field is the gas field, just north of Lenapah and Wann. It is an extension of the Lenapah stuff and already there are about 20 producing wells. The pool is fifteen miles in length. The Kansas Natural Gas Company got in on the ground floor and is making good in developing the country. By October 1 they expect to have a pipe line completed to the Grabham pump station. The latest completion was the Markham well, owned by the Oglesby Oil and Gas Company in section 22-29-15, several miles north of production and it started off with a pressure of 3,000,000 feet a day.

Going further south in the old shallow sand fields, just now there is more activity than there has been for months. Operators are finding that they can make money in the shallow pay and on several leases are drilling as fast as possible. The wells rarely average over 5 or 10 bbls. each, but with enough of them and with the small expense incurred in drilling them, there is money in the proposition. In the old field around Nowata, the Richard Oil Company, the Eldorado Oil Company, the Paraffine Oil Company, the O'Neill estate, the Hecla and the Helen Oil Company are all operating and getting some nice little wells. Below in the Chelsea and Alluwe districts, A. N. Warner, the Laurel Oil and Gas Company and others have resumed operations and are drilling for small wells. If the price of oil were to go up within the next few weeks, Oklahoma would be the busiest place in existence, but as it now stands, prospects are not the brightest in the world.

Bird Creek.

There is much more to be done along Bird Creek, the possibilities seeming to be as good there as at any place in the field just now. There is a lot of country up there that has never been developed and with the recent good luck of Senator Lockwood, the Producers, Robinovitz, the Canadian Oil and Gas Company and others up in that direction, it has begun to look as if there might be much doing within the next few weeks. A. W. Shulthis, of Independence, drilled a dry hole on the Field allotment in section 23-22-13. A. W. drilled to the Bartlesville then went into the Tucker, but found nothing in either instance. Deming & Acosta are ready to drill their test in section 29-22-13, M. Christie land, but some litigation over the lease has delayed matters. Fred McDonnell, contrary to his usual good luck, has drilled a dry hole on the Harnage 40 acres, north of Tulsa, section 36-20-12. He had some sand, but there was no pay. The Okla Oil Company test on the Walkley, section 12-20-12 is a small producer, probably making 25 bbls. a day. Ufer & Sinclair will get about 25 bbls. a day from their No. 2 on the Alberty, section 13-20-12. Stansberry & Armstrong have a small producer in their first attempt on the Bessie Brady, section 23-20-12. Its initial production was 20 bbls. The Turley pool has not turned out as well as was expected. It seems to have been a pocket of oil, very small in area, but productive in the first place.

South of Tulsa.

The next few weeks will be important ones in the development south of Tulsa. Many are expecting a pool of considerable size in that direction, but the more conservative do not think it substantial enough to warrant such a prediction. No doubt there will be a number of tests drilled, in fact a number are well under way, but so far as developing anything more than just a half mile or so of territory there has been nothing to show for it. W. C. McBride got nothing in the shallow sand in his test on the Jones land in section 5-18-13, and is drilling to the Glenn. So far the development has proved so spotted that one is not able to make any kind of a prediction as to the outcome. Perry & Arnold are due in the Red Fork sand with a well on the Aaron Bell land, section 30-19-13. Herry Kerstetter has a well drilling on the Rachel Drew land, section 30-19-13, northeast of the Osborne & Arnold gasser, drilled several weeks ago. G. F. Carver, a newcomer to Oklahoma, has entered the game south of town and will drill a well on the Perryman, section 30-19-13, and also on the Mayfield in section 20-19-13, the latter location on the southeast of the southeast quarter. Henry Greis has made a location on the Frank Thomas, section 8-19-13 and has begun to build the rig. Minshall & Suppes should have their No. 1 on the Lydia Fisher, section 8-18-13, in the Red Fork Thursday. This is west of the Sinclair & Ufer and Minshall & Suppes stuff in section 7-18-13 and is an important extension of the field. Chas. Page has made a location on the Orcutt land, section 33-19-13, and will drill a test immediately in the southwest corner of the northwest quarter. He drilled a dry hole on the north end of the lease some time ago and is now going to try his luck in the south end. The last well on the Shipman land, the Lucas Oil Company, is not holding up as well as might be expected of a well that started off at 1,000 bbls. It has been put to pumping and will make a producer of probably 200 bbls.

Creek Producer.

News came from Mounds, Okla., last Friday that the Central Fuel and Light Company had a nice well on the Jessie Vowell land, section 6-16-12. The well will make between 80 and 90 bbls. according to the latest reports. Some time ago, the Central company drilled a test well on the allotment and got gas. They shut it in and a short time ago it began to spray oil. As a result they made a location and drilled No. 2 with the above result.

The Oklahoma Natural Gas Company has decided to abandon the well on the Henry Self land, section 30-17-10. It had considerable gas at 2,000 feet and registered 3,000,000 feet for several days. It was dry in the deeper pay.

Ponca City Producer.

The 101 Ranch Oil Company has another producer in the Ponca City field, on the Running Arrow land in section 17-25-2, southeast of the first well drilled in June. At 1,580 they got a good body of sand and at 10 feet in the well began spraying oil. It is estimated at 100 bbls. a day though just now they have a fishing job with the tools in the hole. They are drilling at about 1,500 feet on the Crawford farm, southeast quarter of section 7-25-2. The formations seem to be very regular with the exception that in the 1,300-foot sand, where gas was found before, there was salt water in large quantities. The company is also drilling on the northwest quarter of section 17-25-2, Washita Foureye, at about 400 feet and on the Emily Primeau at 700 feet. E. A. S.

NORTH TEXAS.

A GOOD SHALLOW WELL.

ELECTRA, Tex., Sept. 5.—The Red River Oil Company has a well producing 200 bbls. per day from the 500-foot sand on its property north of the Clayco and Texas leases. An effort will be made to drill the same well through to the 900-foot and lower sands if necessary. The company moved in a drilling machine right away and will drill a well immediately beside the one just started, to catch the same sand at about 500 feet. There was 20 feet of good sand at 574 feet and the well flowed for some time before it was shut in. The possibilities at Electra seem to grow greater and those who are already in the game feel confident that Northwest Texas is the field of the future.

Producers Oil Company's Valuable Team, Which Was Killed in a Gas Explosion.

Sam E. Bell, A. A. Little and Andrew Benson have started their test on the Douglas land, adjoining the town site of Electra on the west. They have about 15,000 acres in one block and if it proves good will make a killing. The Producers Oil Company has a rig up on the Mariott land, east of the Electra Oil and Gas Company stuff, but drilling has not started on account of some litigation over the lease. W. C. McBride of St. Louis, Mo., has entered the game with a view of winning. He has paid some fancy prices for leases and they look to be worth while, though it is hard to predict the future of Electra. Some say it will have the life of the Texas pools—short in duration, limited in area and very prolific for the time being. If such is the case, those who have stuff close in will make the money, for it has been demonstrated that there is oil in a limited area around the discovery wells, at least. McBride has made a location on the southwest corner of the west half of section 226 (Wagoner survey) known as the Woodruff land. Mr. McBride paid $5,500 for 80 acres several months ago, when it was at least a mile and a half from production. He has also made a location on the Woodward 30 acres, lying in section 22, for which he paid $10,000. The well will be drilled in the center of the section, in a five-acre piece, furthest south in the McBride tract. It is understood that Chapman, McFarland and Hivick have the adjoining 80 acres on the south, and will drill a well within a short time. Another outside location has been made by Whitehill & Burns on the southwest corner of the east half of 226, just east of McBride. Beuerbaum & Co. of Dallas have started a test on the Williams land, northwest of Iowa Park, seven miles, about 4½ miles south of the Red River.

The Beat well, drilling in section 255 by The Texas Company, is drilling at about 1,200 feet and, according to report, has been dry in all the shallow sands. It is also reported the well filled with salt water in the 900-foot pay. Overman & Neff have disposed of their interest in the well. W. S. Mowris is about 1,300 feet at his well southwest of Harrold, a mile and a half, in section 23. He missed all the shallow sands entirely and will drill a thorough test of his acreage. The Clayco well north of the Chapman & McFarland lease (Red River) reported dry in the 900-foot sand, has had a fishing job and is only drilling at about 800 feet.

The Frick-Reid Supply Company storeroom has been completed, and the company expects to be ready for business right away. Ted Smith has been on the ground for the past two months and he has the situation well in hand. The National Supply Company, the Oil Well Supply Company and the Atlas will also open up stores.

Saturday noon a party of fifty oil men, sojourning at Wichita Falls, at the invitation of the Commercial Club of Fort Worth, Tex., went to that city to spend Sunday. Fort Worth is anxious to show the oil men that she is on the map, and they had a royal good time. They traveled in a special train and were at no expense from the time they left Wichita Falls until they returned. Southern hospitality is making a "hit" with the "talent," and they seem to like to stay there as long as possible. E. A. S.

TEXAS—LOUISIANA

CADDO FIELD.

Summary of August Operations.

Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
29	4,110	12	2	13	46	59
33	5,350	5	3	19	62	81
4	1,240	7	1	6	16	22

Decrease in completed wells, 4.
Decrease in production, 1,240 bbls.
Increase in dry holes, 7.
Decrease in gas wells, 1.
Decrease in rigs, 6.
Decrease in drilling wells, 16.
Net decrease in new work, 22.
Average per well for August, 142 bbls.
Average per well for July, 162 bbls.

The summary of August operations in the Caddo field shows a decrease in every department beginning with four

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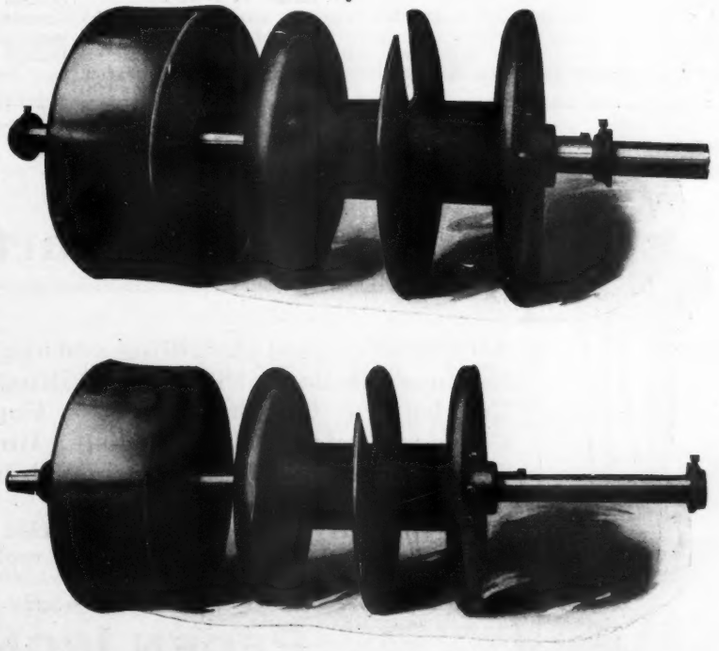

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less completions as compared to July and ending with an average per well for August of 142 bbls. as compared to 162 bbls. for July. The month of August showed 29 completions of which 15 were producers with an initial production of 4,110 bbls. as compared to 33 completions in July of which 25 were producers with an initial production of 5,350 bbls. Twelve dry holes were completed in August and 2 gassers while July showed only 5 dusters and 3 gassers.

Not only was the field affected in new production and a greater number of dry holes but the falling off in work is the greatest for over a year. Only 46 rigs were running on August 26, with 13 rigs up, including 3 shut down, and the new work record shows a decrease of 22 for the month.

This decline was not unexpected as the field has proved erratic from the very first and none of the big wells which encouraged drilling have been brought in recently. The majority of the big wells do not hold up very long and offset wells prove strippers. The August report shows 4 wells with an initial production of 500 bbls. and better, but none of these reached 1,000 bbls. In the past hardly a month went by without at least a 5,000-bbl. producer and some were as large as 20,000 bbls. so the comparative little wells drilled in August have a tendency to discourage very extensive drilling.

August was a hard month on the producers of heavy oil, 10 cents being knocked off the price and very little outside oil being run but some contracts made by the Standard Oil Company will help the situation.

The Texas Company reduced the price of light oil from 60 cents to 48 cents on August 1, but so far the Gulf and Standard companies have made no change.

ANOTHER GOOD CADDO WELL.

SHREVEPORT, La., Sept. 2.—Another good well was completed in the Caddo field in the district close to Barry No. 1 of the Standard Oil Company in section 10-20-16, making the fourth completion in this particular part of the field, all producers, with a good initial production. The new well, No. 2 Davis, belonging to the Producers Oil Company is located 850 feet southwest of the Standard's Barry 1 and is flowing 800 bbls., which would indicate that a pretty good pool had been struck in this vicinity. Barry No. 1 drilled several months ago with an initial production of 7,000 bbls. and flowed steadily for some time at the rate of 1,700 bbls. per day until September 1 when it gave up the ghost. It is bridged with 150 feet of shale which was apparently heaved up from the bottom and the company expects to have it cleaned out in a few days and get it flowing again. The other two wells in this same pool was Barry No. 2 of the Standard, a 650-bbl. producer and Marshall No. 2 of the Gulf Refining Company, which started off at 300 bbls.

The fact that all four of the above wells started off large, even if the new ones do not hold up very long, is encouraging to the producers who have about given up all hope of finding a pool which will supply oil to more than one hole. The territory will be thoroughly drilled and it may prove more productive than some of the other sections which showed one gusher and then went to seed before any more holes could be put down.

The Standard Oil Company brought in a good well in the southwest corner of the northeast quarter of section 9-21-16 in the Monterey district. The well, Jones No. 1, started off by heads making 200 bbls. but shows signs of increasing its production.

Other Completions Small.

The Pure Oil Company completed Hanszen No. 3 in the southeast quarter of section 4-20-16, a small well making 69 bbls. by heads. This is the fourth consecutive well drilled by this company and is the smallest of the four. It is being equipped with standard rig to pump. The Producers Oil Company completed Lane-Levee Board No. 3 in the southwest corner of the northwest quarter of section 3-20-16 which is showing for a small well and is being worked on to try and improve it. This is the third well on the lease, the first, a 1,500-bbl. producer, flowed for months, quit, was deepened and started off again at 2,500 bbls. but did not hold its new production very long.

The Standard Oil Company completed another well in the Monterey district, Ellerbe No. 4 in section 9-21-16. It would not flow and will be pumped.

A Gasser at Vivian.

Only one well was completed in the shallows, the Caddo Gas and Oil Company bringing in a 15,000,000 gasser on Ivins No. 1 in the southeast quarter of the southeast quarter of section 32-22-15. The Cudahy Oil Company's test, Teat No. 1, in the northwest corner of the southwest quarter of the northeast quarter of section 29-22-15, is bailing but does not show very much oil.

An Important Test.

The Corsicana Drilling Company, drilling its first test in the Caddo field, Ruffin No. 1 on the Tanner survey in Marion County, Tex., set liner at 2,382 feet and bailed, the fluid standing within 600 feet of the top of the hole. The well made one flow over the top of the derrick. There is some salt water in the hole and efforts are being made to shut it off with the prospects of making a fair producer. The Corsicana company is drilling on some land purchased by the Standard Oil Company in its big deal with the Trees Oil Company, the land later being transferred to the Corsicana company. This company is the producing branch of the Magnolia Petroleum Company of Corsicana and Beaumont, and already has some good production at Electra, the new north Texas field. The company has some extensive holdings in Texas near the Louisiana line and a well on the Ruffin land, will probably mark the beginning of extensive drilling.

Drilling Notes.

The Sun Company leads in drilling operations in the Vivian field, having 5 rigs running and a new derrick up. No. 32 Newby, in section 34-22-15, a well which was stopped in the gas sand and later decided to go for the deep oil, is trying to pull liner to go deeper. This company has been very successful in the shallow sand but has not had much luck in the deep sand. Other companies drilling at Vivian are the Caddo Gas and Oil Company on the Browning tract in section 27-22-16, which has had a fishing job for months. The company succeeded in getting out the 4-inch drill stem but has the 6-inch pipe stuck at 1,850 feet. The Cudahy Oil Company, drilling its first test in the field, has a drill stem stuck at 2,156 feet in No. 1 Williams in section 35-22-16. The Company's No. 1 Teat, is bailing at 1,029 feet, with very little showing and Baker No. 1 in section 28-22-15 is a rig. The Sugar Oil Company is down 1,200 feet in its first test on the Cabino lease in section 18-22-15 and the Producers Oil Company No. 15 Bailey in section 29-22-15 is bailing but does not look very good. In the Harts Ferry District, 20 wells are drilling, 5 rigs are up and one test temporarily abandoned. The Standard Oil Company is trying to sidetrack three joints of pipe in Isles No. 3, an old well in section 3-20-16; is drilling Stiles 47 in section 28-22-16; Helpman No. 9 in section 16-21-16; Barry Nos. 4 and 5 in section 11-20-16; Whitworth No. 1 in section 2-20-16; Sutherlin No. 1 in section 36-21-16; a rig up for No. 48 Stiles in section 17-21-16; a rig up for J. Hart No. 5 in section 29-21-16, and is deepening Stiles No. 6 in section 27-21-16 an old shallow well which was drilled by the Trees Oil Company and which produced for eighteen months in the shallow pay.

The Standard easily leads in the matter of new work in this district, the Gulf Refining Company having only a couple of rigs running. The Producers Oil Company has none at present and the smaller producers making up the balance of the new work. The Coster Oil Company, set 4½-inch casing in No. 15 in section 2-20-16, making a record in the Caddo field, setting liner 16 days after the work was started. Only two strings of casing were set, however, the 8-inch at 300 feet and the 4½-inch at 2,050 feet. The company is drilling No. 8 in the same section but is having trouble in finding a seat for the 6-inch casing and will cement. The E. S. Cayce Oil Company has temporarily abandoned Donham No. 3 at 1,625 feet. The Pompano Oil Company's first test in section 4-20-16 is drilling; the Irish Oil Company has resumed drilling in its first test in section 2-20-16; the Pocahontas Oil Company No. 1 fee, has been drilled in and a standard rig has been built and a gas engine ordered. The hole stands full of fluid but lacks gas to flow. The company has a rig up for a second test on the same lease.

The Sun Company drilled No. 16 Levee Board deeper and the oil stands up within 75 feet of the top of the hole.

The Pure Oil Company is drilling No. 4 Hanszen in section 4-20-16 and the Etchison Drilling Company has a rig up on an old location on the Camp lease in section 35-21-16.

Monterey District Quiet.

Although a few small wells have been completed in this district, none of the new ones have in any way approached the size of the first three

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completed by the Producers Oil Company and while there is considerable activity going on, nothing out of the ordinary has happened to stir things up. The past week showed two wells drilled into the sand but neither had gas enough to flow and at this time look like pumping propositions. The Standard Oil Company's Elerbe No. 4 in section 9-21-16 set liner at 2,400 feet and oil stands up 1,700 feet in the hole. The second test of the Higgins Oil and Fuel Company on the Harrell lease in section 10-21-16 set liner at 2,410 feet and bailed out the water, the oil standing 80 feet in the hole and standard rig is under construction.

The Sun Company has started work again on Martzo No. 1 in section 28-22-16, two miles north of the Harrell well, and is trying to pull liner. The Higgins Oil and Fuel Company is drilling No. 2 on the Schulthis lease in section 9-21-16. The Producers Oil Company is drilling Nos. 8 and 9 Harrell in section 4-21-16 and Levee Board No. 17 in section 9-21-16, and the Standard Oil Company is drilling Nos. 5 and 6 Ellerbee in section 5-21-16; Ellerbee No. 7 in section 9-21-16; Files No. 1 in section 4-21-16 and Patton No. 1 in 5-21-16. As in the Harts Ferry district, the Standard leads in the matter of new work, with the Producers Oil Company leading in production. The Gulf Refining Company is drilling one well, Carter No. 2 in section 9-21-16.

In the Lewis district, the Standard Oil Company has temporarily abandoned its Smith No. 2 at 2,312 feet. The test looked for a time like an extension to the field and got everybody excited for a short time but like many another white man's hope in this field has proved a disappointment. The Midland Oil Company No. 1 Brooks in section 25-21-16, has set 8-inch casing and is waiting for cement to set.

No wells are drilling in the Oil City district, the Blanchard Oil Company having a rig up in section 12-20-16. This was the first district to produce oil in the Caddo field and the first tests were made here. After several years of mediocre success, the development moved into the Pine Island district and then down to the Mooringsport district, both of which at present have no new work of any character. After the Trees Oil Company secured the first big well in the Harts Ferry district, the scene of operations again changed, this time 10 miles up the lake and it was not until late last fall when the Producers Oil Company brought in Atlanta No. 1, up to that time the biggest well of the field located east of the bayou, in section 3-20-16, that the Oil City district again got busy. The Atlanta well is located about 2 miles west of Oil City and as it was the first drilled in this part of the country, it caused a tremendous amount of excitement and as a result, the old property at Oil City again took on enough importance to warrant several of the property owners getting good prices for their land. The drilling between the Atlanta well and Oil City was not profitable, however, and after several dry holes were drilled in section 2-20-16, operations began to fall off and soon ceased, and it is doubtful if the place ever again assumes any importance as a producing district.

Marion County, Tex., the home of the Burr pool, has two tests which look like producers. Not since the Burr and other wells nearby were drilled by the J. M. Guffey Petroleum Company, have any other wells proved profitable in that county and therefore the test of the Corsicana Drilling Company, Ruffin No. 1 in the Tanner survey is being watched with a good deal of interest. Water and oil are standing within 600 feet of the top of the hole and it is likely that the water can be shut off and a producer made.

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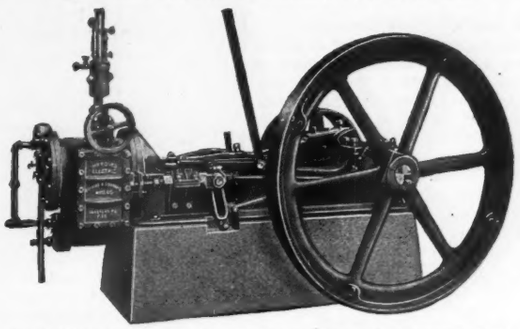

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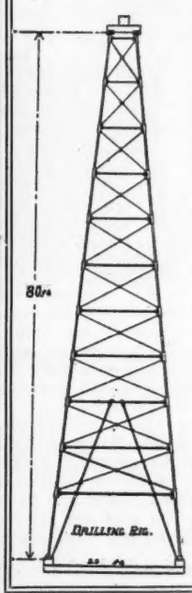

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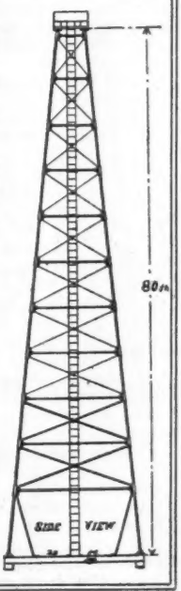

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The test of the Caddo Lake Oil Company, Ames No. 1 in section 24, shows a small amount of gas and oil at 1,057 feet and a small producer may be made at a shallow depth. The Cudahy Oil Company is drilling Ragsdale No. 1 in the Ragsdale survey, 4 miles northwest of the Harrel well and is a very important test. The Guffey company has made a location on the Ed Myer survey about three-fourths of a mile west of the state line, opposite section 32-22-16 in Louisiana.

No Change in Production.

The production of the field is about the same as last week, the loss of Barry No. 1, offsetting the new production gained. Probably 22,000 bbls. would cover all the oil being produced, both grades, with the light oil running close to 16,000 bbls. There is no change in the Harrell well, about 10,000 bbls. being produced of which 10 per cent is oil with the Producers company unable to treat it out.

A. V. B.

GULF COAST

A VINTON PRODUCER.

BEAUMONT, Tex., Sept. 3.—For the first time in some weeks, Vinton reported a completion, the Producers Oil Company owning the well. It is No. 2 on the Vincent tract to the east of the main producing wells and is the best well drilled on that lease by the company, making 200 bbls. The Vincent tract was originally leased by Stati and associates but their failure to renew the lease on time—they were awaiting the result of a test to the south—enabled the Gulf Refining Company and the Producers Oil Company to get the tract, which comprises 100 acres. The Gulf found it had secured 54 acres out of the 100, the Producers getting the balance. The Gulf Company chose the western line of the property along with the balance of its share and was very successful, its wells proving among the richest in the field. The Producers company leased a part of the tract to the Ninety-Nine Pumping Company, a subsidiary company, and it, together with the Producers, drilled a number of dry holes on the lease. When the Producers leased a 20-acre tract to the west of the Vinton Petroleum Company's 20 acres, drilling on the Vincent tract was abandoned and it was only when the 20 acres began to play out that drilling on the Vincent tract was again started.

The test being made by the Producers Oil Company to the extreme west and south of the production, is down 2,500 feet and looks like a duster. This is the only test at present on the west side of the lake and will probably wind up operations in that district. When the development started westward toward the lake, it was a good gamble that the field extended across the lake and a number of tests were drilled in the bed of the lake itself and six tests were started on the west side of the lake. Of these tests, eight were dry and either abandoned or shut down, the Abercrombie test being the sole survivor.

A scarcity of rigs is noticed, only 11 running, where a few months ago, at least 25 were busily engaged in drilling and the fact that so few are running now, tells the tale of failure for the majority. The Producers Oil Company is drilling No. 8 Gray and is deepening No. 2 on the same lease, the tract of 20 acres adjoining the Vinton Petroleum Company's rich 20 acres to the east. The Vinton Petroleum Company is waiting for a string of cable tools to fish some pipe out of No. 11 Gray, and for the first time in 17 months has no rigs running. The Gray Oil Company is ready to begin drilling on No. 3 Gray, located east of No. 1. This company went into an old hole abandoned by the Gulf Refining Company before Vinton was a field, and made a 300-bbl. well. The formation encountered by the Gulf company was extremely hard and after the company had spent over $7,000 drilling about 900 feet, it quit the hole. The Gray Oil Company encountered the same hard rock and probably spent $20,000 additional before the well was completed. It is the lightest oil found at Vinton, testing 26.2°, the other oil testing 19.5°. No. 2, located due north of No. 1, was started immediately by the Gray Company and proved a failure, but the company is making another effort, this time in a different direction.

T. H. Bass, a well known Oklahoma and Gulf Coast operator, is drilling his second test in the field. His first, located in the bed of the lake was shut down about 1,300 feet, having cost about $10 per foot to drill. His new location is due east of the Gray Oil Company's well, and is on the Gardiner-Noble land. The Crowley Oil and Mineral Company is another company which struck a lot of hard rock in its first test and after months of persistent effort is down 1,800 feet. The Newman, trustee, Gray No. 2, missed the shallow sand found in No. 1 at a little below 1,100 feet and is now down 1,300 feet. The Atlas Oil Company is down 2,700 feet in its first test and as the deepest sand has been found in the neighbornood of 2,100 feet, the outlok for a well is dubious. The Hooks Oil Company's test, No. 3 Gray, leased to W. D. Gordon and associates, after several failures to set strainer, is going to be deepened.

It is doubtful if the field is producing 4,000 bbls., as with the falling off in the old wells and the lack of new production it will be hard to maintain a large output from now on.

Jennings reports 2 rigs running without a completion for the week. The Gulf Refining Company is drilling Arnaudet No. 25 and the Crowley Oil and Mineral Company is drilling No. 54 fee.

The Texas Fields.

Only one completion was reported for the week for the entire Texas fields in the Gulf Coast country, and that a dry hole, making the poorest showing for that portion of the country for many months and probably since oil was discovered in the lower fields.

The completion was in the Humble field, Decker & Paddock bringing in No. 5 Dannebaum, a water well at 980 feet. The same company is drilling No. 6 on the lease. Only six wells are drilling with one new rig up, the lowest new work record for many a month.

In the Spindletop field no wells were completed, one is shut down and one temporarily abandoned. Eight wells are drilling and one new rig up. The Cassie Oil Company is waiting on strainer for No. 18 Gladys, and S. F. Stollenwerck is working on his deep test, No. 5 Rowe. McReynolds & O'Gorman are rigging up on No. 3 Cissell, their first two wells on the lease being good producers.

At Batson, the Reliance Oil Company No. 11 Paraffine, is dry at 400 feet and will be deepened. The J. M. Guffey Petroleum Company is drilling No. 122 Wing, Buchanan & Fitzsimmons are drilling No. 6 Britton, and the Sun Company has made a new location for No. 45 Milhome.

The Producers Oil Company is setting strainer in No. 7 Nancy Fuller at 1,500 feet, in the Saratoga field. The J. M. Guffey Petroleum Company is drilling No. 19 Hopkins, the Rio Bravo Oil Company is drilling No. 314 fee and the Sun Company is drilling No. 56 Williams.

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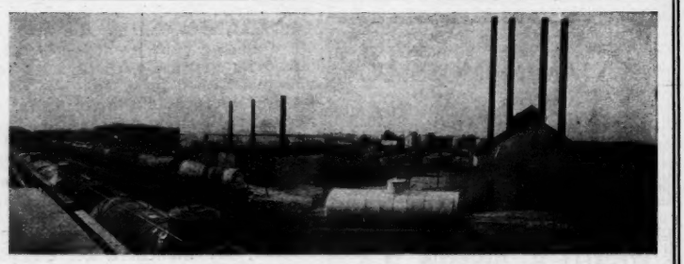

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Two wells are drilling in the Sour Lake field, the Campbell Oil Company bailing No. 2 Campbell and the C. Y. T. Oil Company is drilling No. 116, Rio Bravo. The Texas Company is deepening No. 41 fee and has abandoned Nos. 57 and 61 fee.

Conditions are about the same in the Markham field, no new wells having been completed. The well of the Prairie Oil Company is making about 300 bbls., the production of the field running about 1,500 bbls. The Hardy Oil Company bailed No. 36 Smith dry, an offset to the Prairie well.

Wildcat Notes.

J. S. Wheeless and associates are reported to have a good gasser with a little show of oil in their test near Eagle Pass, Texas. The company tried to clean out an old hole drilled about five years ago, which had a gas blowout at 700 feet, catching on fire and burning the rig. Wheeless was unable to get back into the old hole and moved his rig 50 feet away and drilled the new hole with cable tools, using the old rig of the Union Oil Company at Uvalde, Texas, the heaviest rig brought into the state. The depth at which the gas was found in the new hole is 900 feet.

The Mrs. L. Sneed, Trustee, test at Anse La Butte on the Moresi lease is below 500 feet. Mr. L. F. Benckenstein, a well known Gulf Coast operator is in charge. Mrs. Sneed is interested in the Spindletop and Vinton fields and has been very successful.

A. V. B.

ILLINOIS

Summary of August Operations.

	Comp.	Prod.	Dry	Rgs.	Drg.	Ttl.
Clarke	5	90	1	..	4	4
Cumberland ..	3	25	2	..	1	1
Crawford	43	692	13	..	32	32
Lawrence	54	4,115	3	3	97	100
Marion	4	90	2	..	5	5
Clinton	32	2,640	3	..	34	34
Miscellaneous .	5	6	3	1	15	16
Total 146		7,658	27	4	188	192

Increase completed wells 19.
Decrease new production 1,400 bbls.
Decrease dry holes 1.
Abandoned wells 14.
Decrease rigs 6.
Increase drilling wells 1.
Net decrease in new work 5.
Average July wells, 88 7/10 bbls.
Average August wells, 64⅕ bbls.

The August figures in the Illinois fields denote an increase in the number of completed wells, while in new production, there was a decline due to the failure to complete any wells of note in the deep sand fields of Lawrence county, and the new Carlyle pool, in Clinton county, while July was credited with several large producers. There is a slight falling off in new work under way, mostly noticeable in the Carlyle pool, where the heaviest decrease is reported. Crawford county also shows a falling off, while other fields are just about holding their own, with a slight increase in Lawrence county. There is still a scarcity of water, although there has been numerous showers during the month. The water famine is not the only cause of a decline in new development work, as the scarcity of good drillable territory is also a noticeable feature.

It is evident that the rich Carlyle pool is now going backward, as no addition has been made to the pool, leaving inside locations to drill. If the present activity is kept up and no new extensions found, it is evident that the next thirty days will see a vast difference in the number of completions, drilling wells, and a lowering of the daily production. The production will dwindle rapidly as the wells are getting pretty thick, and the finding of oil in only one sand, means a rapid decline. The field is now doing close to 4,000 bbls a day and is the most productive pool opened up during the year east of the Mississippi river. The Carlyle pool, itself shows 30 com-

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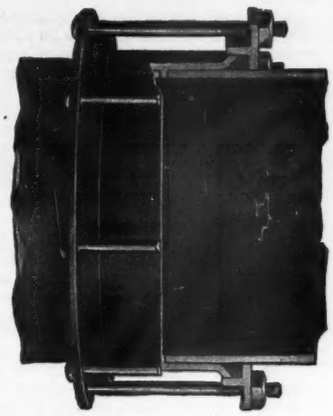

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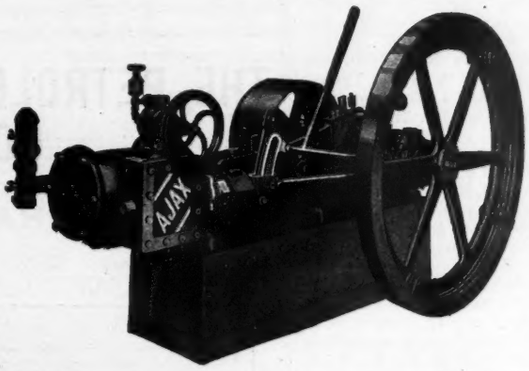

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DRILLING AND FISHING TOOLS

pleted wells for August, with one dry hole and a new production of 2,640 bbls, while two dusters were found in the county, but outside the pool, which is located in Wade township. The best well during August in the pool was the Surpass Oil and Gas Company's No. 6, H. J. Schlafly farm, section 3, Wade township, which produced 250 barrels. The smallest producer was the same company's No. 9 on the A. Hempen farm, section 10, which produced but 10 bbls. There were eleven of the wells in the pool that were finished during August that produced from 100 bbls. up, which is a very good record for a small area of territory, which only covers a portion of four sections. There are 23 wells drilling in the pool by the Surpass Oil and Gas Company; E. N. Gillespie; the Ohio Oil Company; Burton Bros.; Treat & Crawford; Frank B. Ranger; Courson & Brown; the Busch-Everett Company, and the Belmont Oil Company, while outside the pool, in Wheatfield, Carlyle, Germantown, St. Rose, Irishtown, Looking Glass and Santa Fe townships, there are a total of 11 wells drilling. When these eleven outside tests are completed in Clinton county there should be something more definitely known as to the prospects of an extension of the productive Wade township territory. The field now has a total of close to 75 producing wells. There were but four exceptionally good wells found in the Lawrence county field during August. The best one was the Ohio Oil Company's No. 19 on the Lewis K. Leighty farm, section 35, Dennison township, which produced 520 bbls. from the McCloskey sand at 1,771 feet. The next best producer was the Mahutska Oil Company's No. 7 on the William E. Updike farm, section 35, Petty township, which produced 450 bbls. from the Green sand at 1,664 feet. This well produced equally as much the second day after completion and is showing wonderful staying qualities as this sand does when an oil pay is found in it. In the same township, the Ohio Oil Company drilled a 200-bbl producer in No. 2 on the J. L. Kimmell No. 2 farm, section 26, while No. 5 F. F. Middagh farm, section 33, Lawrence township produced 200 bbls. There were 54 wells drilled in the Lawrence county field during the month, of which three were failures, and 51 were oil wells, with a new production of 4,110 bbls.

The Crawford county field completed but 43 wells, a decline of 10 from the July figures and out of this number 13 failed to show any oil, the balance only showing a new production of 692 bbls.

During August there were a total of 146 wells completed in the Illinois field, with 27 dry holes and gas wells, and a new production of 7,658 bbls, an average per well of 64½ bbls. for the producing wells. This is an increase in completed wells of 19, and one less dry hole, while in new production there is a decline of 1,400 bbls.

In new work under way at the close of August there were four rigs up and 188 wells drilling, showing a decrease of six rigs up and an increase of one in drilling wells, making a net decline of five from the July figures, which is not so bad when the conditions are known.

Work Falling Off.

Work is slacking up to some extent in the Crawford county field, owing to the scarcity of good drillable territory and the failure to get enough rain to supply water for drilling purposes.

In Oblong township, Crawford county, the Ohio Oil Company's No. 42 on the Woodworth heirs' farm, section 34, pumped 20 bbls. and its No. 16 on the I. L. Firebaugh No. 2 farm, section 35, made 40 bbls. It is about due in the sand with No. 8 Ralph Newlin farm, section 29; No. 9 John Best farm, same section, and No. 8 George Zeigler farm, section 6. The Canadian Oil and Gas Company's No. 5 George Zeigler farm, section 6, made 18 bbls.

In Prairie township, same county, J. C. Donnell, agent, drilled in a 45-bbl. producer in No. 7 A. J. Holmes farm, section 30. There are six strings of tools working in the township.

In Licking township, same county, Stranahan, Rogers and associates No. 6 on the southeast corner of the Samuel Robinson farm, section 2, pumped but 10 bbls., with No. 7 drilling near the sand. R. A. and J. B. Crawford's No. 9 Thomas Geff's farm, section 1, made 10 bbls. The Commonwealth Oil Company's No. 14 Susannah Smith farm, section 2, is good for 25 bbls., and the Ohio Oil Company's No. 3 Thomas Geff's No. 2 farm, section 1, made 65 bbls.

In Honey Creek township, same county, the Shaffer-Smathers Company's No. 10 A. Jewell farm, section 9, is good for 10 bbls. and No. 5 Vincil heirs' farm, section 10, pumped 50 bbls. The Ohio Oil Company's No. 9, C. O. Connot farm, section 9, made 35 bbls. The Associated Producers Company's No. 10 J. L. Buzzard farm, section 22, was a duster, while J. C. Donnell, agent's, No. 6, P. J. Garrard farm, section 19, pumped 25 bbls.

In Montgomery township, same county, Huntoon & Burton's No. 1 on the southwest corner of the E. Cooper farm, section 20, produced 10 bbls.

Shallow Sand Pumper.

In Parker township, Clark county, between Casey and Westfield, George C. Stahr drilled in a 24-bbl. shallow sand pumper in his No. 17 on the northeast corner of the I. N. Terrell farm, section 20, and L. G. Bradstreet found a duster in his No. 11 Ross Lee farm, section 29.

Parker Bros. and associates are drilling a test well on the J. H. Seaton farm, section 6, Orange township. In Johnson township, same county, L. C. and C. L. Duffield's No. 8 Fears & Graham farm, section 22, pumped 10 bbls.

Cumberland County Pool.

In the Siggins pool, in Union township, Cumberland county, northwest of Casey, W. R. Tague and associates drilled a duster in their No. 8. W. H Arney farm, section 25, and the Ohio Oil Company has one of the same kind in No 13 L. C. Lacey farm, section 14. It is near the sand with No. 19 S. E. Underwood farm, section 13.

In Bridgeport township, Lawrence county, L. E. Lantz and associates have a 30-bbl. pumper in No. 12 on the northeast corner of the S. W. Zeller farm, section 8, and a 45-bbl. pumper in No. 13 same farm. This well found its pay at 1,749 feet, while No. 12 found it at 1,745 feet. No. 14 same farm, is also drilling, as is No. 2 Walter Gray farm, same section.

The Ohio Oil Company's No. 29 on the J. L. Kimmell farm, section 31, made 50 bbls. It is drilling Nos. 22, 23 and 24 W. C. Miller farm, section 20; No. 4 C. W. Baker farm, section 1; No. 1 B. A. Legrond farm, section 19; No. 14 C. H. Fyffe No. 1 farm, section 31; No. 11 A. J. Combs heirs' farm, section 31 and No. 12 J. E. Johnson farm, section 32.

Snowden Bros. No. 16 Charles O'Donnell farm, section 17, made 75 bbls and No. 17 is drilling. J. K. Brown, is drilling a test on the S. D. Milhair farm, section 20. The Central Refining Company is drilling a test on the W. C. Claycomb farm, section 9. The Oil City Trust Company, has rig No. 7 on the H. K. Seed farm, section 29. The Shaffer-Smathers Company is drilling No. 41 W. E. Finlay farm, section 17, and Mayhugh & Harshberger are at work on No. 4 H. P. Shephards heirs' farm, section 29.

Active in Lawrence County.

Development work is active in the Lawrence township field, of Lawrence county, and shows more activity than for any period during the present year. With plenty of water for drilling purposes there would be much additional work.

Snowden Bros. have been pushing the drill on their F. C. Whittaker farm, sections 2 and 11. No. 2 on this farm produced 60 bbls from the Kirkwood sand, while No. 3 was drilled to the Tracy sand and produced 55 bbls. No. 4 same farm, and in section 11, pumped 30 bbls. No. 5 in the same section produced 40 bbls. No. 6 on the same farm, in section 2, made 30 bbls, while No. 7 pumped 50 bbls. Their No. 1 Thomas Whittaker farm, in section 10, produced 40 bbls. with No. 2 drilling.

The Ohio Oil Company's No. 4 Martin Kirkwood farm, section 11, made 40 bbls., and No. 5 is drilling. Same company's No. 7 J. A. Seed farm, section 10, produced but 5 bbls. Same company's No. 11 Phillip Moore farm, section 4, produced 140 bbls., with No. 12 drilling. By cleaning out and drilling deeper its No. 5 on the F. F. Middagh farm, section 33, the well was increased from a light producer to 200 bbls. a day. They are drilling No.'s 9 and 10 V. Christensen farm, section 14; No. 2 Roy Summers farm, section 2; No. 15 S. L. Gray farm, section 14; No. 8 Lee Gillespie farm, section 15; No. 5 William Cooper farm, section 4; No. 12 S. D. Lewis heirs' farm, section 16; No. 8 J. T. Griggs No. 3 farm, section 15; No. 8 C. E. Seed farm, section 15, and No. 2 Hattie Tanguary farm, section 2.

The Linden Oil Company's No. 5 R. M. Kirkwod farm, section 2, is a 100-bbl. producer with No. 6 drilling. It is also drilling No.'s 1 and 2 Thomas Whittaker farm, section 3.

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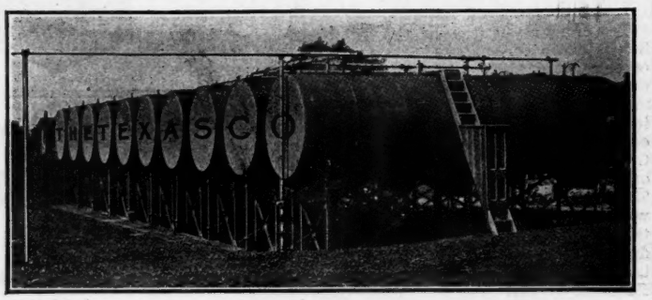

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the northeast corner of the Harrison Hardacre farm, section 10, made 125 bbls. natural from the Kirkwood sand. It is drilling No. 5 same farm.

W. C. McBride drilled in a 60-bbl. pumper in his No. 16 Nelson M. Rogers farm, section 14, and is drilling No. 17. Chammes & Whittaker are drilling No. 2 Thomas Whittaker farm, section 10.

In Dennison Township.

In Dennison township, Lawrence county, the Ohio Oil Company's No. 26 L. A. Buchanan farm, section 2, made 75 bbls. from the depth of 1,608 feet. Its test on the William Buchanan farm, in the southwest quarter of the southeast quarter of section 6, produced 60 bbls. from the same depth. Same company's No. 2 on the northeast corner of the E. J. Rigley farm, section 11, was a duster at a depth of 1,797 feet, while its No. 13 Rebecca Gould farm, section 23, pumped 40 bbls.

OHIO

Summary of August Operations.

	Comp.	Prod.	Dry	Rgs.	Drg.	Ttl
Wood	17	135	1	7	24	31
Hancock	12	401	..	2	8	10
Allen	2	11	..	..	1	1
Auglaize	1	.....	1	1	4	5
Sandusky	7	34	1	..	3	3
Mercer	1	.....	1	..	1	1
Van Wert	2	30	..	2	5	7
Seneca	2	12	..	..	3	3
Lucas	1	5	..	1	3	4
Ottawa	1	2	..	..	1	1
Total	46	630	4	13	53	66

Increase completed wells, 4.
Increase new production, 132 bbls.
Abandoned wells, 38.
Decrease rigs, 4.
Increase drilling wells, 7.
Net increase in new work, 3.
Average July wells, 13 2/19 bbls.
Average August wells, 15½ bbls.

Development work in the Lima fields of northwestern Ohio for August shows a slight gain in all branches of the industry. There is a slight increase in the number of completed wells, production and drilling wells, while in rigs up there is a decline, but is more than made up by the number of new wells drilling.

The best wells of the month were found in the Hancock county field, in the old time gas territory between Findlay and North Baltimore, in Liberty and Allen townships. The leading producing wells was the Ohio Oil Company's No. 21 on the Mahlon Decker farm, in Allen township, Hancock county, which produced 140 bbls, and still reported close to 100 bbls. The C. A. Moorhead No. 13 on the Rowland farm, section 26, same township, produced 70 bbls. The Ohio Oil Company's No. 13, Fisher farm, section 25, about 50 bbls. and the same company's No. 42, Alexander farm, section 34, same township, about 50 bbls., while in Liberty township, same county, the same sized producer was drilled by the Harris Oil Company, in No. 16 Kirkbride farm, section 12. The Ohio Oil Company also found a 50-bbl. producer at the start off in a test on the J. H. Strough farm, section 33, Union township, same county. The wells in the old Wood county field were mostly light pumpers, and the same can be said of Sandusky, Mercer, Auglaize, Seneca, Lucas and Ottawa counties.

A test well drilled by A. Huenke on the Neuman farm, in section 17, German township, Auglaize county, developed into a very light gas well. There are three test wells now drilling in Moulton township, same county, that will be watched with interest. They are the Lamel Oil Company's on the Sharp farm, section 11; the Moulton Oil Company's on the Long farm, section 33, and the Variety Oil Company's on the Morirs farm, section 35.

The test of the Burton Company on the Betts farm, near Bettsville, in Jackson township, Sandusky county, that looked like a real duster when

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drilled in, was given a shot and is producing about three barrels. The Haubert Oil Company, drilled a test near Coldwater, in Butler township, Mercer county and secured a nice gas producer, which was sold to the citizens of Coldwater.

During August there were 46 wells completed in the Lima fields of northwestern Ohio, of which four were dry holes, and the others showing a new production of 630 bbls. This is an increase of four completed wells and 132 bbls. in new production over the July figures. The average daily production per well for August was 15½ bbls. During the month there were 38 old wells abandoned.

In new work under way at the close of August there were 13 rigs up and 53 wells drilling, against 17 rigs for July and 46 wells drilling. This is a decrease of four in rigs up and an increase of seven in drilling wells, or a net increase of three.

INDIANA

Summary of August Operations.

	Comp.	Prod.	Dry	Rgs.	Drg.	Ttl.
Wells	1	10	..	..	1	1
Jay	1	15	..	..	1	1
Delaware	2	110	..	..	3	3
Madison	2	.....	2	..	..	..
Gibson	1	.....	..	..	..	..
Pike	3	30	..	1	6	7
Miscellaneous.	1	.....	1	2	..	2
Total	11	165	3	3	11	14

Increase new production, 53 bbls.
Decrease dry holes, 2.
Abandoned wells, 122.
Increase rigs up, 1.
Decrease drilling wells, 1.
Average July wells, 18⅜ bbls.
Average August wells, 20⅝ bbls.

The August figures show no change in the number of completed wells from the July figures. The only change is that there are two less dry holes and an increase of 53 bbls. in new production.

The leading well of the month was found by Seidy & Roberts in their No 9 on the A. H. Ratcliff farm, in Liberty township, Delaware county, in the old Trenton rock end of the field which produces 100 bbls. a day. This well is above the average, and the owners are so well pleased that they have started No. 10 well on the same farm. The next best producer was found by the Ohio Oil Company, in No. 5 on the J. A. Morrison farm, in Jackson township, Wells county, with a production of 25 bbls. The Oakland City field in the southwestern section of the state is not showing anything but ordinary pumpers. Three wells were drilled in Pike county and are 10-bbl. producers. In the Washington township, Greene county field, the North American Oil and Gas Company, drilled a duster in its third well on the Charles McKee farm.

During August there were a total of 11 wells completed, with three dry holes and a new production of 165 bbls. This is an increase of 53 bbls. in new production and a decrease of two in dry holes, with no change in the number of completed wells from the July report.

During August there were 122 old wells abandoned in the Indiana field.

In new work at the close of August there were three rigs up and 11 wells drilling against the July report of two rigs up and 12 wells drilling. This is no change in the total of the new work.

KENTUCKY.

Summary of August Operations.

	Comp.	Prod.	Dry	Rgs.	Drg.	Ttl.
Wayne	9	202	3	4	9	13
Floyd	1	25	..	1	..	1
Wolfe	..	.....	..	1	1	2
Webster	..	.....	..	..	1	1
Total	10	227	3	6	11	17

Decrease completed wells, 4.
Increase new production, 32 bbls.
Decrease dry holes, 4.
Increase rigs, 1.
Increase drilling wells, 1.
Net increase, 2.
Average July wells, 24⅝ bbls.
Average August wells, 28⅝ bbls.

The Kentucky-Tennessee field during August shows a decline in completed work, but an increase in new production, and to offset the drop in finished work, there is an increase in the new work under way which is encouraging. The field had two leading features during the month. One was the 100-bbl. producer found by the Wood Oil Company, in its No. 14 on the Joseph Hurt farm, in the Mt. Pisgah district, of Wayne county, and the drilling in of a 25-bbl. producer by the Yolanda Oil Company, in its No. 4 on the Joseph Hall farm, in the Beaver Creek district, of Floyd county. The old Floyd county field had been practically abandoned and the completion of this good producer may result in the resumption of activity in that one direction. The new well is located among a cluster of wells where there are many more locations equally as good looking as where the new well was drilled.

Eastern capitalists have leased up large blocks of territory in Hancock county, along the Ohio river across from Indiana, and east of Evansville and southeast from the Oakland City field, and just west from Breckenridge county, and will do some wildcat work. Some drilling has been done in Hancock county, but no permanent production was ever developed. In most cases indications of gas were found, being located directly to the west from Meade county, which furnished some gas for a number of years. The leaseholders do not intend to stop with the drilling of one test, but will drill a series of tests over the county so that if oil and gas exists there, they are bound to find it. The drilling will be shallow or about the same depth as in the southwestern Indiana regions, or the development at Birdseye, in southern Indiana, ranging from 600 to 1,500 feet. A boost in the price of credit balances, would do much toward enlivening activity in the Kentucky regions, and would render more profitable the many small pumpers that are now lying idle in the state.

In completed work for August there were 10 wells drilled, of which two were dusters and eight producers, with a new production of 227 bbls. This is a decrease of four in completed wells and four in dry holes, while in new production there is an increase of 32 bbls., owing to the good completion in the Mt. Pisgah district. In new work under way at the close of August there were 6 rigs up and 11 wells drilling against the July figures of 5 rigs up and 10 drilling wells, or an increase in two in favor of August.

PENNSYLVANIA, WEST VIRGINIA, SOUTHEAST OHIO.

Summary of August Operations.

	Comp.	Prod.	Dry.	Rigs.	Drg.	Ttl.
August	440	2.212	161	192	365	557
July	404	2.017	139	160	388	548
Difference	36	195	22	32	23	9

The fields producing the Pennsylvania grade of oil completed 36 more wells in August than in July, and the new production was 195 bbls. greater. The dry holes were 161, an increase of 22 over July.

The fields of northwestern Pennsylvania, including the Allegany field of New York, show increased activity in Venango, Clarion and Butler counties, with a slight decrease in the more northern counties. There were 195 wells completed in August, an increase of 21. Of this number 39 were dry, four more than in July. The new production was 442 bbls., an increase of 170. The greatest increase in new production was in the Venango-Clarion district, where the new wells gave an increase of 70 bbls. over July's figures.

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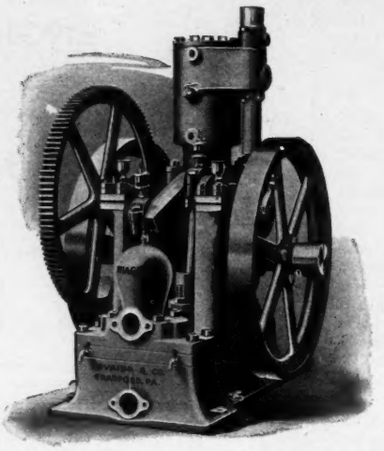

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At the close of August there were 69 rigs up and 130 wells drilling, an increase of 15 rigs and three drilling wells.

Development work in the southwest Pennsylvania, West Virginia and southeastern Ohio fields at the close of August showed an increase in completed work, a very slight decrease in new production and an increase in dry holes and gas wells.

The southwest Pennsylvania fields, comprising Allegheny, Beaver, Washington and Greene counties, completed 27 wells, 10 more than in July. Of this number 13 were dusters and two gassers. The new production amounted to 169 bbls. as against 163 bbls. in July. The average for August was 12 bbls. and for the preceding month 14⅔ bbls.

The West Virginia fields completed 107 wells during the month. The new production amounted to 834 bbls. There were 56 wells listed as dry holes, of which number one-half are profitable gassers. As compared with July, this was an increase of two in completed wells, a decrease of 181 bbls. in new production and an increase of 11 dry holes. The average for August was about 16 2-3 bbls. and for July a little below 17 bbls. Wells with a large production had no part in the developments of the month. The Church Run extension in Wetzel county was expected to furnish considerable new production, but the last two completions proved very light producers. The month closed without any territory in sight capable of furnishing anything better than moderate producers. The efforts made to find new producing territory resulted in failures.

The three divisions, southwest Pennsylvania, West Virginia and southeastern Ohio, completed 245 wells in August. Of this number 122 proved barren of oil. Thirty-six were profitable gas wells and 86 total failures. The 123 wells listed as producers supplied 1,770 bbls. of new production. As compared with July this was an increase of 15 in completions and an increase of 18 dry holes and gassers. The difference in new production was very slight. In August all fields contributed 1,770 bbls. and in July 1,745 bbls. The distribution of new production for the month of August was as follows: Southwest Pennsylvania 169 bbls.; West Virginia, 834 bbls. and southeastern Ohio, 767 bbls. The average in August was a little higher than in July. The 123 producers in August had an average of a little more than 14 bbls. The 136 producers in July averaged a little less than 14 bbls.

At the close of August the southwest Pennsylvania fields had 20 rigs and 27 drilling wells, a total of 47. As compared with the close of July this was a gain of nine rigs and a loss of 10 drilling. The new work underway and starting that is attracting any attention is in the vicinity of the fourth sand producer, north of Wildwood in Allegheny county and town lot developments at Canonsburg, Washington county. Greene county shows an increase in new work, largely due to the activity of the gas companies.

West Virginia shows a gain of four rigs and a loss of nine drilling wells at the close of August, as compared with July. At the close of August there were 70 rigs and 125 drilling wells, a total of 195. In active operations Roane, Harrison and Ritchie counties lead in the order named. The scarcity of water continued all through the month and in many localities was a great hindrance to both development work that had been started and much that should have been under way. Recent rains should replenish the streams that have been dry for four months and more work should be completed in September than in August.

(Continued on Page 30.)

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GAS—LIGHT, HEAT AND POWER

PITTSBURG STOCK MARKET.

PITTSBURG, Pa., Sept. 5.—Natural gas and oil stocks were practically the only isues that held their own on the local exchange last week. The market was narrow, Pure Oil Common furnishing the bulk of the 2,582 shares traded in, and there was little or no gossip out on any of the company's. The outside market was very quiet with the exception of Arkansas Natural which was freely quoted for the first time in several months at 14½ bid, offered at 15.

Manufacturers Light and Heat was steady and unchanged at 22¾ to 22⅞ with last sale at latter figure. Four hundred and fifty-five shares changed hands and the close was weaker with 22⅝ bid and no stock offered.

Pure Oil sold 1,975 shares and was one eighth better at 8½. Closed with 8½ bid and 8⅝ asked. A large majority of the preferred stock has been turned into the company at 100 and interest and the small amount outstanding has been provided for so that there seems to be no reason why the stockholders should not have a whack at the large cash surplus existing.

Ohio Fuel Supply was unchanged at 40½ with 50 shares on the market. Closed with 40 bid and 41 asked. Ohio Fuel Oil was off ⅛ to 6½ with 52 shares traded in. Closed 6½ bid and 6⅝ asked. Ohio Fuel Oil debt. 6s were unchanged at 98½ bid and 99 asked.

Oklahoma registered one sale at 60 with 50 shares changing hands. Closed with 60½ bid. There seems to be a bullish tendency toward this stock.

Pittsburg Oil and Gas is quoted 3 bid, no stock offered.

In the unlisted department, Union is 127@138, Alum Rock 119@120; Wichita 38@41; Fayette offered at 103 and Kansas at 22; Lone Star 74@76 and Lone Star 6s at 94@96.

J. P. C., Jr.

CENTRAL OHIO.

Summary of August Operations.

	Comp.	Prod.	Gas	Dry	Rgs.	Drg.	Ttl.
Licking	8	....	6	2	5	27	32
Fairfield	....	....	..	..	1	8	9
Knox	....	....	..	..	1	10	11
Hocking	2	....	1	1	2	10	12
Perry	3	....	..	3	..	4	4
Ashland	5	....	5	..	7	16	23
Muskingum.	1	....	..	1	..	3	3
Coshocton	..	....	..	..	..	1	1
Medina	2	....	1	1	2	3	5
Lorain	....	....	..	..	..	1	1
Jackson	..	....	..	..	..	1	1
Wayne	..	....	..	..	..	3	3
Holmes	..	....	..	..	..	1	1
Ross	1	5	..	..	..	..	..
Total	22	5	13	8	18	88	106

Decrease completed wells, 18.
Decrease oil production, 5 bbls.
Decrease gas wells, 14.
Decrease dry holes, 3.
Increase rigs up, 1.
Increase drilling wells, 15.
Net increase new work, 16.
Total gas production, August wells, 43,253,490 cubic feet.
Average per gas well, 3,327,192 cubic feet.

The central Ohio gas fields made a poor showing in completed work for August, when compared with July, but in new work under way there is a large increase. There were 13 gas wells drilled in the field during August with a production of 43,253,490 cubic feet, while in July there were a total of 27 gas wells completed with a combined gas production of 69,700,000 cubic feet.

The large gas producing concerns are not pushing the drill like they would if there was a scarcity of gas. They are contented to know that they have a plentiful supply at the present time for all consumers as well as any new additions made to the lines. There is still some talk of the construction of a gas line from the central Ohio field to Detroit, although only about 65 miles of trunk line will be required to furnish Detroit as there must only be an extension from Toledo to Detroit.

The Ohio Fuel Supply Company is now connecting up its Ashland and Medina county wells by extending its lines from the Homer station, in Licking county to the Ashland field, and the Medina Gas and Fuel Company, and the Lima Natural Gas Company have contracted for pipe and material for the construction of a 10-inch main from Mansfield to Ada, O., a distance of about 65 miles. By this extension they can furnish gas to Lima, St. Marys, Celina and Wapakoneta. The Medina Gas and Fuel Company is a subsidiary to the Columbus Natural Gas Company, and has large holdings in the northern end of the central Ohio field. It is conceded that the Logan Natural Gas and Fuel Company, the Ohio Fuel Supply Company, and the Columbus Gas and Fuel Company hold leases on considerable over a million acres of land in the field, and all the companies are now doing some test work.

Ashland county is the mecca of the gas companies that are lucky enough to have leases in the county, for large gas wells are being found along with the dusters. The field although a spotted one, shows the best gas wells in the state at this time. The Logan Natural Gas and Fuel Company, during August, made some very good strikes in the Ashland field. The best of its completions was a 11,000,000-foot well on the Allen Yeater farm, in Miflin township, and a 5,000,000-foot producer on the Wm. M. Gourd farm, same township, and another in Montgomery township, same county, good for better than 5,500,000 cubic feet. In Miflin township, the Ohio Fuel Supply Company's well on the D. Barr farm, produced 8,000,000 cubic feet. There are now seven new rigs and 16 wells drilling in the Ashland county field. Medina county did not do much during August, having but two wells completed. One was a duster while the other produced 1,000,000 cubic feet, and both were located in the Litchfield township end of the county.

In the south end the best find was made by the Central Contract and Finance Company, on the Canfield farm, in Perry township, Hocking county, and which is rated good for several million cubic feet. But one oil strike was made in the field during August and that was a wildcat drilled by the Herods Creek Oil Company, near Harper Station, about 17 miles west of Chillacothe, in Ross county and a long distance in advance of production. The oil was found in the Trenton rock at a depth of 1,850 feet, instead of in the Clinton formation, as are the producing wells in the field.

The heavy boost in taxes is bothering the gas people no little. In most cases the taxes have been doubled.

During August there was a total of 22 wells completed in the central Ohio field. Of this number one was a small oil producer, 13 gas wells and 8 were total failures. This is a decrease from the July figures of 18 completed wells, five barrels in oil production, 14 gas wells, and three dry holes. There were also 26,446,510 cubic feet less gas found than during July.

In new work under way at the close of August there were 18 rigs up and 88 wells drilling, an increase of one in rigs up and 15 in drilling wells, or a net increase of 16 over the July figures.

STILL LOSING GAS.

WASHINGTON, Sept. 5.—Officials of the United States land office are alarmed over the waste of gas on the Indian lands of Oklahoma, due in a large measure to the inadequate policing of these lands by the state.

The fact that thousands upon thousands of dollars were being lost to the Indians through escaping gas has been brought to the attention of the officials here by the fact that the Kansas City Utilities Commission has hired the State Geologist of Kansas, to go into the Oklahoma fields and make a complete investigation of the situation.

From the information in Washington it seems that the Kansas City organization became alarmed over the fact that enough natural gas was not being supplied to that city and further over the report that the gas supply in Oklahoma was waning. This caused them to consider an investigation independent of the owners of the product and to send the Kansas official out for a report upon the conditions.

Stories had reached Kansas City that an enormous waste of gas was going on in Oklahoma and that unless something was done to stop it, the gas supply would soon be exhausted.

When the action of the Kansas City people came to the attention of the Bureau of Indian Affairs in the Department of the Interior, Commissioner Valentine and his associates began making inquiries of their own about the matter. They are interested in the situation purely from the standpoint of the Indian and the value of the Indian lands. If the gas lands of the Indians are being allowed to depreciate in value because of indifference in conserving the gas supply, something need be done.

So far as can be learned in Washington the whole blame for the present condition is unloaded upon the state government of Oklahoma. A law was recently passed prohibiting the waste of natural gas but it seems that little provision was made for enforcing it. Not enough police were authorized to make the act effective and the waste is now going on, it is said, about as if there were no such laws.

WEST VIRGINIA GAS.

On Fishing creek, Green district, Wetzel county, the Hope Natural Gas Company has drilled a test on the Uriah Milburn farm through the Gordon and has a gasser. On State Road run, in the same district, the same company is rigging up at a test on the Benjamin F. Fox farm.

On Wylie fork, Grant district, the Hope company has completed its test on the Ellen Glover farm and has a light gasser in the Keener sand. On Fallen Timber run N. S. Snyder & Co. are due in the Big Injun at a test on the Elmer E. Ice farm.

On Shinn run, Sardis district, Harrison county, the Carnegie Natural Gas Company has drilled a second test on the B. F. Heldreth farm through the Gordon sand and has a light gasser. On Jones run, in the same district, Brast & Agnew are due in the sand at a test on the L. D. Barnes farm.

On Indian creek, Grant district, Monongahela county, Brock & Courtney have drilled their test on the J. N. Michael farm through all sands and have a duster. On Dolls run, Clay district, the Union Utility Company is drilling a test on the E. A. Morris heirs' farm.

On Rock Camp run, Sardis district, Harrison county, the Hope Natural Gas Company is starting a test on the Jesse Sprout farm. On the same stream, W. M. Miller & Co. are drilling a test on the C. F. Bailey farm. On Grass run, in Ten Mile district, Allender & Bradley are drilling a test on the W. S. James farm and the Kinch Oil and Gas Company is starting a second test on the T. S. Morris farm. The Gillespie Oil and Gas Company has the timbers on the ground for a test on the A. A. Stout farm. On Raccoon run, the Raccoon Oil and Gas Company has the rig complete for a test on the Lon Rhodes farm.

In Mannington and Lincoln districts, Marion county, there is some experimental work starting. On Helens run, Lincoln district, the Fairmount Gas Company is starting a test on the A. N. Prichard farm. On Buffalo run, the Carnegie Natural Gas Company is drilling a test on the James Downs farm.

INVESTIGATING THE GAS FIELD.

Kansas City, Mo., through the public utilities commission, has started an investigation of the gas fields from which the supply for the city is obtained and has employed Prof. Erasmus Haworth, of the University of Kansas, to investigate the physical facts of the gas supply. The Kansas Natural Gas Company, which supplies the city is asking for an increased rate and asserting the equitable need of it, owing to the diminishing supply and the cost of pipage from the fields. Professor Haworth has stated that the investigations would be persued in two general directions. First, to collect accurate and authentic data in regard to the gas available at the present time and scientifically to estimate the future value of the field. Records of former tests of wells will be compared and enough properties visited to form a good opinion of the probable worth of the properties. Professor Haworth will take a couple of weeks in the preparation of his data and will then turn it over to the commission. He is at the head of the school of mining engineering at the University of Kansas. As state geologist two years ago he published a large volume of data concerning the Kansas oil and gas field.

FIGURING ON A FRANCHISE.

The citizens of Kenmore, N. Y., have been looking into the matter of granting a franchise for natural gas for the village, two propositions having been considered at a public meeting held recently. Two proposed franchises were read, one from Zimmerman & Sterns and the other from Harry Huver and associates. The meeting was called by the village board of trustees to get the opinion of the residents regarding the granting of a franchise for natural gas, and although the meeting was largely attended no definite action was taken aside from the fact that the majority were not in favor of granting a franchise until gas was piped to the village limits and a reasonable rate assured. Mr. Hall, representing Zimmerman & Sterns, was content to allow the matter to rest for a couple of weeks, and gave the assurance that if the village saw fit to grant a franchise that the concern would drill five wells at once. Dr. Huver said that his company wanted a definite statement and that if it was to be granted a franchise it should be made known at once.

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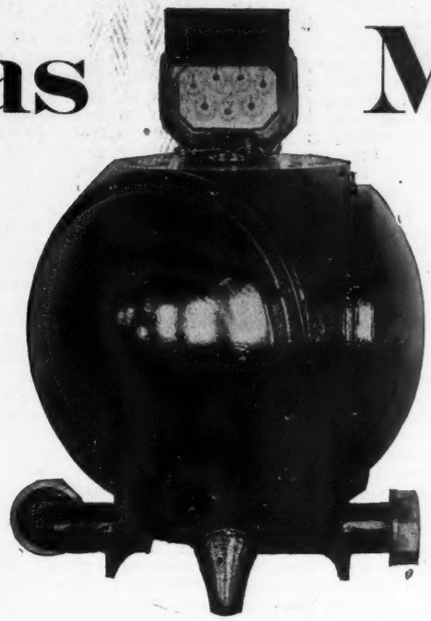

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GATE VALVES—Five hundred 6-inch standard screw end gate valves, different makes. Price as they are, $3 each; repaired and tested out, $4.50 each; cost new, $7.50. Gulf Pipe Line Company, Beaumont, Texas.

DRILLING RIG—One complete, eighteen-inch rotary and eighty-five foot derrick, 6,000 feet rotary pipe. Outfit new, used two months. Owner, Frederic Camors, New Orleans, La.

FOR SALE—One 35 H. P. Bessemer Direct Driven Gas Engine Compressor. Good as new. Used only a few months. Big bargain. For price, address Box 124, Tulsa, Okla.

BUSINESS OPPORTUNITIES

NORTH TEXAS as a producer of high grade oil will soon rival OKLAHOMA. ELECTRA and PETROLIA are proven oil fields.

PUTNAM

just to the Southwest, is fast forging to the front. The Texas Company, The Pure Oil Company and several individuals are taking leases here. The wise ones will get in on ground floor. The others will pay fat bonuses later on and say things. Be wise. For map and particulars address Max Elser, Putnam, Callahan Co., Texas.

MAP showing the oil and gas fields and principal geological features of Illinois, Indiana, Northwestern Ohio, Michigan and Southwestern Ontario and Canada. White prints on cloth, 98x45 inches, 8 miles per inch. Price $10.00, express prepaid. W. H. Heydrick, Butler, Pa.

CONTRACTOR—With standard string of tools to do some drilling in Fayette Co., Alabama. Write, Five Rivers Oil & Gas Co., 418 Chamber of Commerce, Birmingham, Ala.

FUEL OIL WANTED.

A company which uses approximately 250,000 barrels of fuel oil per year and can accept deliveries from concerns operating in the Oklahoma, Texas and Louisiana fields, desires correspondence with companies which are capable of supplying such an amonut of oil. Inquiries addressed to "Fuel Oil," in care of The Journal, will be promptly forwarded.

GAS MEN. Two men thoroughly versed in the operation and application of natural gas appliances, particularly furnace burners. Man must be capable of calling upon present consumers with a view of promoting satisfactory service from existing installation, also capable of pushing the sale of additional equipment. Good salary for right man. Location Southwest Missouri. Address Natural Gas, care The Oil and Gas Journal.

PRODUCTION WANTED

SHALLOW SAND—Production in the shallow sand field of Oklahoma. Address with particulars, Box 487, Nowata, Okla.

PROPERTY FOR EXCHANGE—A 2-acre block improved inside property, in Pittsburg, Pa. Price $85,000. Will exchange for Oklahoma oil production. M. J. Glass & Co., Tulsa, Okla.

NEW YORK EXPORT PETROLEUM MARKET

NEW YORK, Sept. 4.—Transactions in the nature of deliveries on outstanding contracts for petroleum, have been interrupted to a large extent by continued heavy rain storms, which led to moderate shipments for the week just ended. New orders booked for petroleum and products covered sizable lines showing a slight gain over the total for the preceding week. Refined in cases and benzine were mostly traded in. A feature in the market was the marked activity in gas oil, which resulted in large bookings of orders for the latter oil in bulk. Despite the keen competition in foreign markets, particularly in illuminating oil, business has not suffered, but prices are quoted wholly nominal.

Increase of inquiries for oil carriers to load full cargoes of case oil led to the booking of a number of sizable boats at steady rates. Charters embraced the str. Coniston Water, 135,000 cases, hence to four ports River Plate, basis 23c to one port, November loading; str. Eulesia, 125,000 cases to China and Japan at private terms; str. Duncintha (from Port Arthur to five ports east of Africa) at about 25c, September-October loading; str. Hoyle Bank (from Port Arthur to three ports River Plate) at 27c, September loading; str. Hughenden, to five ports Syria and Smyrna, 118,000 cases, prompt loading at 18c a case. The total charters for petroleum and products in bulk, barrels, cases, etc., for the week ended August 31, reduced to crude equivalent, aggregated about 546,000 barrels, showing a slight gain of 20,000 barrels over the total for the preceding week.

Sales of petroleum and products, as outlined in the weekly review below, are based on terms delivered vessel, free on board, New York and Philadelphia, involving 200-case lots and upward and 200-barrel lots and upward, unless otherwise specified. Refined petroleum in bulk attracted less attention and sales covered only moderate quantities, amounting to some 215,000 barrels, showing a shrinkage of over 97,000 barrels, compared with sales in the preceding week, with orders booked at 3.75c per gallon for standard white and 1c per gallon higher for water white oil. Of barrelled oil sales were small, with prices closing at 7.25c per gallon for standard white and 1c per gallon higher for water white oil, cargo lots. Refined in cases (each case containing two five-gallon cans, 110 fire test oil) met with an active demand and large sales, covering over 730,000 cases, showing an increase of some 130,000 cases over the total for the preceding week. Of this amount full cargo lots involved 650,000 cases booked at 8.75c, while the balance of 3,000-case lots and upward covered over 180,000 cases at 8.80c per gallon and 1c per gallon higher for water white oil, respectively. Increased activity in naphtha led to large orders amounting to fully 84,000 cases (mostly in bulk) at 12½c per gallon for 59@62°, in cases. Benzine also shared in the activity over 171,000 cases changing hands (mostly in bulk) at 21¼c for 73@76°; stove at 14¼c and auto 68@70° at 18¼c per gallon, in cases. Gasoline continues in seasonable demand, sales involving about 22,000 cases at 23¼c per gallon for 86°. Lubricating oil met with steady inquiries and over 33,000 barrels were traded in at former prices, as to brand. Of crude oil about 31,000 barrels (in bulk) were booked, while orders for fuel oil covered only small lots. Gas oil was active and large sales involved over 90,000 barrels (all in bulk).

Clearances of petroleum and products at the port of New York, from January 1, to August 31, 1911, amounted to 592,829,291 gallons, showing a gain of some 69,364,603 gallons, compared with the total for the corresponding period in 1910.

Charters for petroleum covering refined naphtha, etc., in bulk, barrels, cases, etc., for the month of August, 1911, reduced to crude equivalent, amounted to 1,988,913 barrels showing a shrinkage of 124,004 barrels, compared with the same month in 1910. The total charters from January 1 to August 31, 1911, aggregated 19,157,013 barrels, with a monthly average of 2,394,627 barrels, showing an increase of 3,092,626 barrels and 386,579 barrels, compared with the corresponding period in 1910, respectively.

The situation in the principal European markets and foreign oil fields remains practically unchanged. In the London and Liverpool markets prices of American and Russian illuminating oils closed unchanged. The situation in Russia remains strong with prices of both crude and refined oil quoted firm and slightly higher in the Baku market, due to small offerings and a continued good demand. In the Galacian market prices of crude and refined closed steady but with prospects for a decline owing to no cessation in the production. The deliveries on outstanding contracts continue fairly large. Nothing of special interest has developed in the Roumanian market and prices are quoted nominal at low levels for crude oil, as well as for refined oil. Parcels for exports are meeting with a fair demand, but at extremely low prices. Absence of a demand for benzine led to a break in prices. Continued activity in the oil fields is noted. Prices of refined oil in bulk and in cases in the Indian markets closed unsettled, owing to keen competition between American refiners and foreign oil syndicates. At Shanghai and Yokohama no price changes were recorded. In the Philippine Islands trade in the various brands of illuminating oils in cases continues active at steady prices.

The following table gives the total charters for petroleum, in bulk, barrels, cases, etc., with comparative figures and monthly averages, reduced to crude equivalent, compiled in barrels:

	1909.	1910.	1911.
January	2,124,74	1,729,459	2,387,460
February ..	2,035,503	1,672,755	2,103,315
March	2,426,247	2,096,910	2,245,563
April	2,132,853	2,025,049	2,692,761
May	1,970,033	2,386,520	2,346,568
June	1,952,265	2,316,747	3,106,044
July	2,658,433	1,724,930	2,287,319
August	2,240,902	2,112,017	1,988,013
September..	2,617,311	2,086,639	.....
October ...	2,111,875	2,041,274	.....
November..	2,002,418	2,534,143	.....
December...	1,806,203	2,060,203	.....
Total ...	26,078,867	24,786,646	19,157,013
Average..	2,173,239	2,065,554	2,394,627

The following table gives the charters for petroleum covering crude, refined and products, in bulk, barrels, cases, etc., reduced to crude equivalent compiled in barrels; also daily averages for the week ended August 31 and since August 1, 1911.

	Day.	Since Aug. 1.	Average
Aug. 25.....	143,809	1,584,931	63,397
Aug. 26.....	136,408	1,721,339	66,205
Aug. 28.....	39,690	1,761,029	62,894
Aug. 29.....	57,143	1,818,172	62,350
Aug. 30.....	106,349	1,924,521	64,151
Aug. 31.....	63,492	1,988,013	64,129

The clearances of petroleum at the port of New York for the week ended August 31 and since January 1, 1911, with comparative figures, compiled in gallons, were as follows:

	Week.	Since Jan. 1.	1910.
Refined ..	9,458,740	427,954,437	369,662,158
Crude ...	945,465	22,139,531	19,032,442
Naphtha..	497,000	48,705,581	39,870,173
Residuum.	.....	95,000	16,330,193
Benzine ..	1,705,000	14,958,329	4,998,883
Gasoline .	196,719	11,073,893	14,319,791
Lub. Oils.	1,146,702	65,914,694	57,611,180
Min. Oils.	15,559	1,987,826	1,639,871
Total..	13,959,185	592,829,291	523,464,688

Foreign Closing Cable Quotations.
(American refined petroleum in barrels, standard white oil, ex-wharf.)

	London. Pence.	Liverp'l. Pence.	Antw'p. France.	Bre'n. Marks.
Fri. ..	4⅝@4¾	4⅞@5	18.75@19.00	6.00
Sat. ..	4⅝@4¾	4⅞@5	18.75@19.00	6.00
Mon. ..	4⅝@4¾	4⅞@5	18.75@19.00	6.00
Tues.	4⅝@4¾	4⅞@5	18.75@19.00	6.00
Wed.	4⅝@4¾	4⅞@5	18.75@19.00	6.00
Thur.	4⅝@4¾	4⅞@5	18.75@19.00	6.00

PENNSYLVANIA.

(Continued from Page 27.)

The local fields are very quiet since the passing of the Perrysville pool. At Hardy station, Allegheny county, there is a little new work under way and starting in the vicinity of the fourth sand producer on the Foster farm. At Canonburg there are but two wells drilling and one rig completed.

In the old districts operators are pushing development work. In many districts the recent rains have furnished a sufficient amount of water to start work that has been long delayed. Some of this work is of an experimental character and somewhat important. While the outlook is not promising there is still time enough before the winter months to test out new territory.

In Wayne, Clay and Kanawha counties, in the southwest part of the state, there is a good deal of wildcatting. For several years Kanawha county has received the most attention and is still in first place in wildcat operations. The discovery of another pool, such as the Berea grit development in Lincoln county, would help some, but it is doubtful whether another like it can be found in any of the counties named. Inside of defined limits in Lincoln county, one company—the Big Creek Development Company—is starting considerable new work and the county shows more wells drilling and starting than at any time since the first of the year. The most of it is routine, simply drilling in odd locations that were omitted during the rush days of development work.

Roane county continues to hold first place in operations. However, the average size of the well is much smaller than during the early part of the year. The 20 producers completed during the month had an average of about 20 bbls. Some fairly good Berea grit producers have been completed in Center district, Calhoun county, within the past month, and they have been an incentive for increased operations. It is not strictly new producing territory, rather an extension to the Rowells Run development.

In new work Ritchie county is dividing honors with Harrison county. More test work is starting in the first named, but is not so widely distributed. For some little time leasing has been somewhat active in Wood county, but there is no movement to develop or start test work. Pleasants county is starting very little new work. Taken as a whole, this county has been more thoroughly tested than any other in West Virginia. In Doddridge, Tyler and Marion counties the gas companies are the most active.

The Buckeye Fields.

The deep sand territory in southeastern Ohio was able to supply several good producers during the past week, located inside of defined limits in Rush Creek township, Fairfield county. The southwest extension in Perry and Hocking counties furnished nothing better than ordinary producers. Recent completions have not added anything to the west side of the extension and but one good producer was found to the east. The indications are that the extension will prove to be very narrow and to trace it out and sidestep dry holes will call for a heavy investment.

In the deep sand territory, near Gore in Falls Gore township, Hocking county, the Logan Natural Gas and Fuel Company has the best producer that has been completed in southeastern Ohio for some months. The well is located on the Catherine Donaldson farm in the southwest extension of the deep sand territory and the second 24 hours after completed and shot placed 120 bbls. to its credit.